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Rocky Mountain Medical Journal

In this issue

On Drug Testing

Doctor Training for The Great Society

Highlights of Early Surgery in Utah

Plastic Surgery in a State Prison

Scoliosis

Venous and Lymphatic Stasis

Regional Medical Programs

Delayed Intracranial Pneumocyst

University of Utah Nurse-Midwifery Program

and other articles

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January 1967

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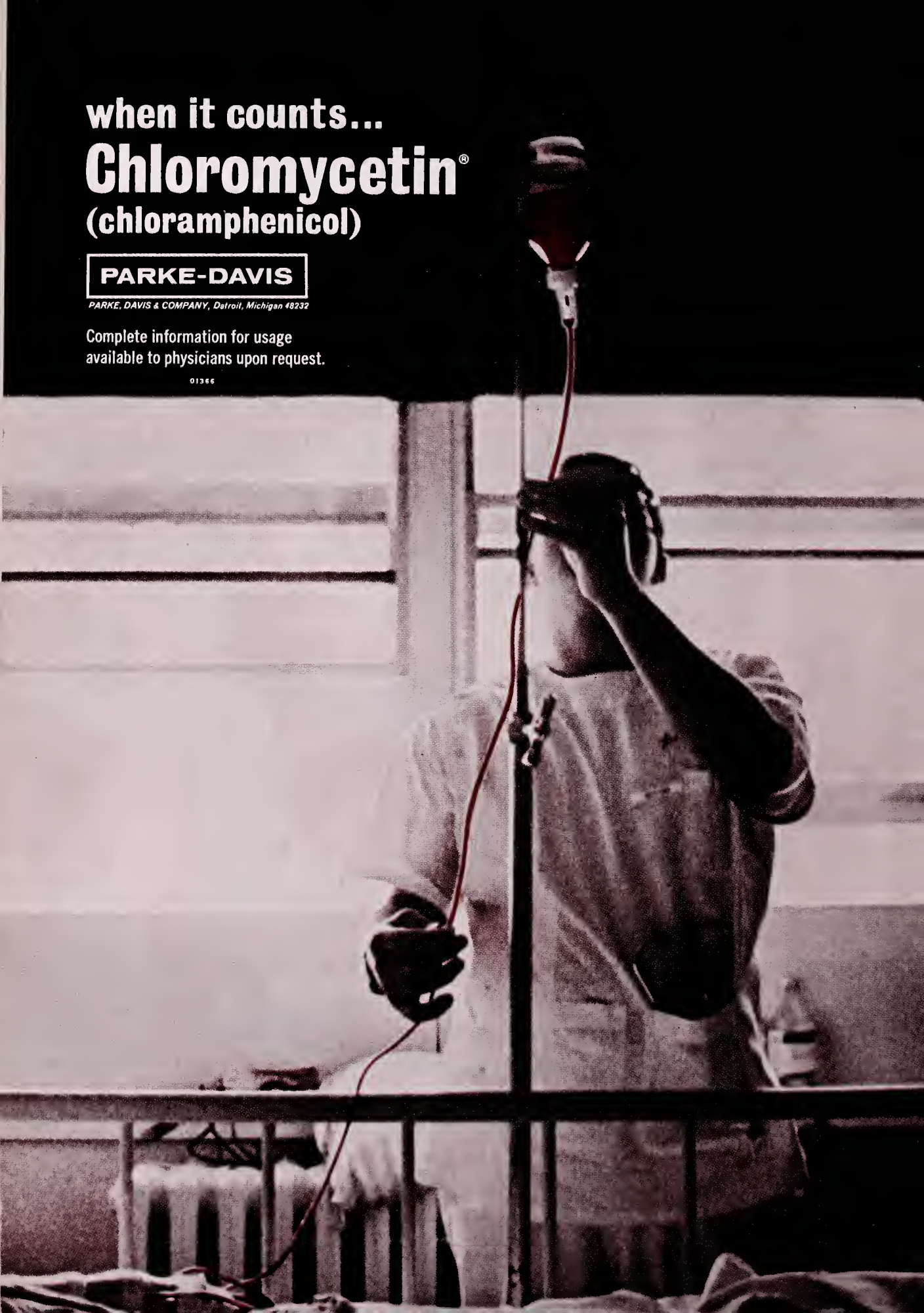
VOLUME 64 • NUMBER 1

COLORADO • MONTANA • NEVADA • NEW MEXICO • UTAH • WYOMING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Our Cover Photo

Utah State Capitol, overlooking Salt Lake City from the head of State Street, is constructed of Utah granite with a dome of Utah copper. Pioneer relics and other exhibits are found on the first floor. On the grounds is the imposing Mormon Battalion Monument which honors the company of 500 infantrymen who in 1846 made the long march unsurpassed in history in our war with Mexico.—Photo courtesy Salt Lake Chamber of Commerce.

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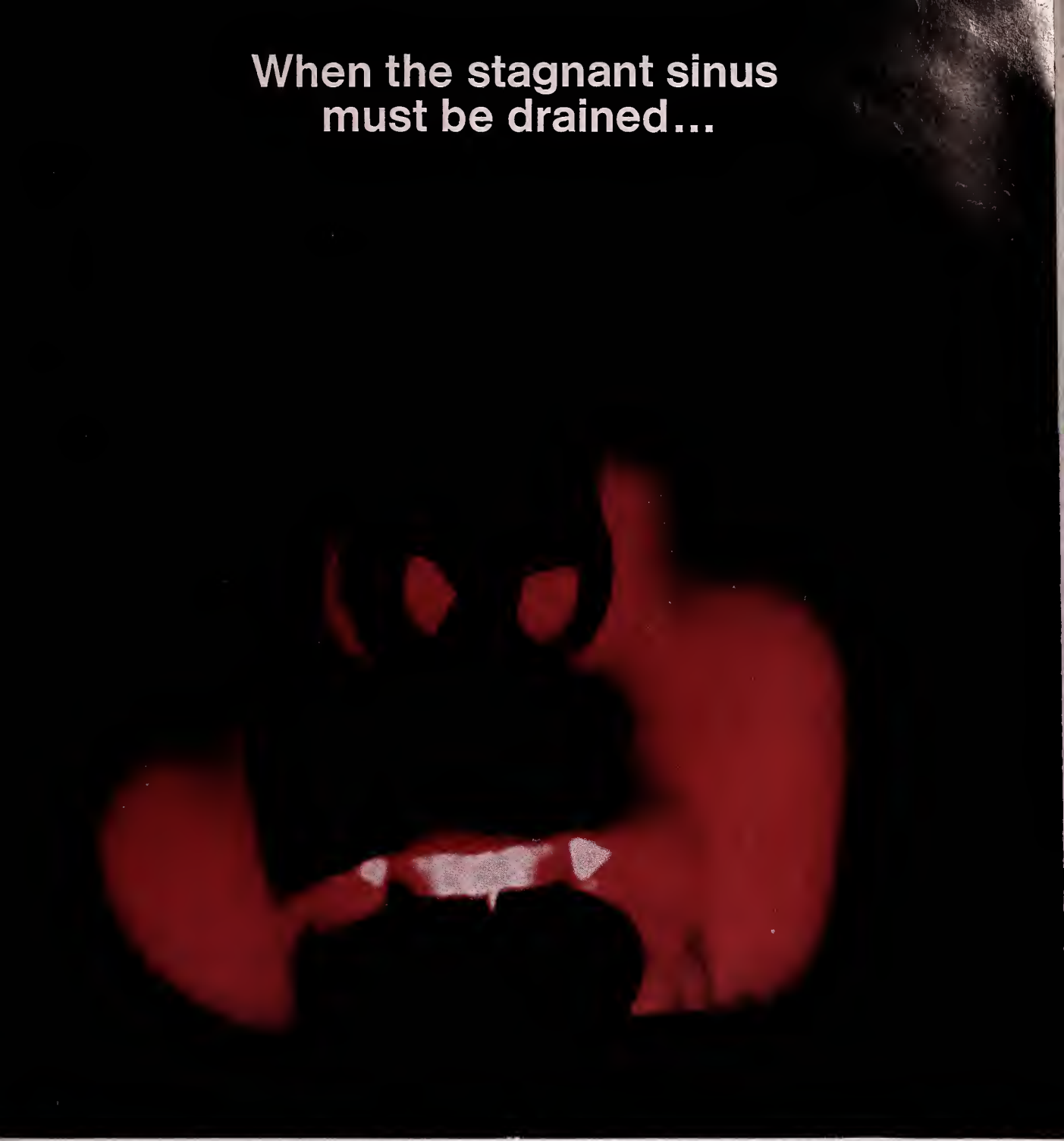
When the stagnant sinus must be drained...



Transillumination of the sinuses – diffuse shadow on right side of face indicates unilateral maxillary sinusitis.

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To the Editor:

Regarding nursing home treatment of senile dementia, present-day nursing homes still are rest homes. Although providing protection and medical supervision for the elderly, they are unwittingly also mausoleums for the minds of the patients. People over 65 usually do not want to move out of their homes. This resistance to change increases with age. When their disability becomes sufficient that they are unable to maintain themselves independently, they are forced to move.

Nursing homes are in demand. They are able to help with age-old problems because the maintenance costs and personnel are financed largely by public welfare funds. The disabled oldster does not want others managing his affairs and may loudly voice his objections. However, once there, his resistance to the nursing home routine is considerably less than one would have expected.

Senile dementia is not directly related to arteriosclerosis and atrophy of the frontal lobes. The process of waning initiative and narrowing interests cannot be found at autopsy. No treatment program is available there to prevent, reduce, or retard the advance of dementia. Nursing home administrators prefer to have peace and tranquility in their buildings, similar to that of a well-manicured graveyard. Outbursts of disturbing behavior are suppressed with tranquilizers by the well-intentioned physician. An atmosphere of monotony is fostered. Everything is done for them. They are discouraged from doing anything for themselves. Helplessness is favored. The nursing home receives a higher payment for the more helpless patient. The demented stare blankly, showing no sign of interest, and wait for eternity.

Senile psychotics are hard to deal with. They are irritable, suspicious, and quarrelsome. Selfish interests predominate. They are fearful and avoid contact with others. This pattern of behavior leads to ever-increasing aloneness. Because they have these traits in addition to chronic illness, treatment must be administered by a physician. Unending rest for a senile patient is well intentioned, not therapeutic. In addition to custodial care, they need affection, recognition, and approval. They should have a sense of dignity and a feeling of worth to the community.

A feeling of independence can be fostered by encouraging and assisting them to do as much as possible for themselves. Some will be able to work in the kitchen, clean the rooms and halls; others can assist in the upkeep of the grounds and repair of the buildings. They should receive payment for this. They need a voice in formulating rules concerning meals, visiting, recreation, and other activities. Hobbies and socials must be promoted by the nursing personnel. Special efforts are needed to encourage them to meet and visit with one another. In order to achieve the sense that they are still part of the community, they should be taken to sports events, plays, concerts, church and other activities. The strength of their feeling that they are a part of the group, their family, and of the community would be the indication of the degree of success of a regimen treating senile dementia.

Theodore R. Lenz, MD
Pueblo, Colo.

Rocky Mountain Neurosurgical Society

The recently organized Rocky Mountain Neurosurgical Society held its first annual meeting at the Broadmoor, Colorado Springs, Colorado on August 28-30, 1966.

Officers selected by the Society were Homer G. McClintock, Denver, president; Charles W. Elkins, Tucson, president-elect; William McKinney, Fort Worth, vice-president; Thomas K. Craigmile, Denver, secretary; John G. Griffin, Denver, treasurer; and Robert L. Imler, Tulsa, historian.

Qualified neurosurgeons and physicians in allied fields are eligible for membership. The geographic domain of the Society includes Arizona, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wyoming and the adjacent Canadian provinces of Alberta, Manitoba, and Saskatchewan.

The second annual meeting will be held at the Arizona Inn, Tucson, Arizona on April 30-May 2, 1967.

Thomas K. Craigmile, M.D.
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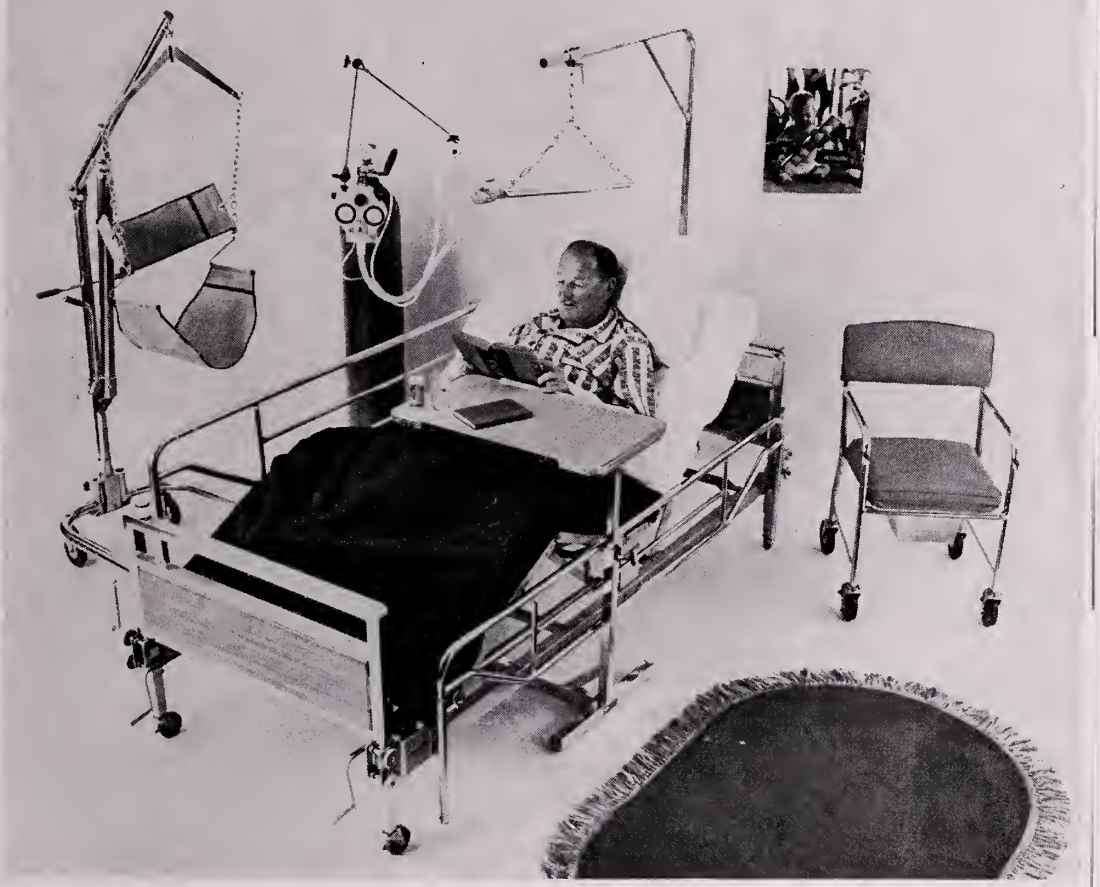

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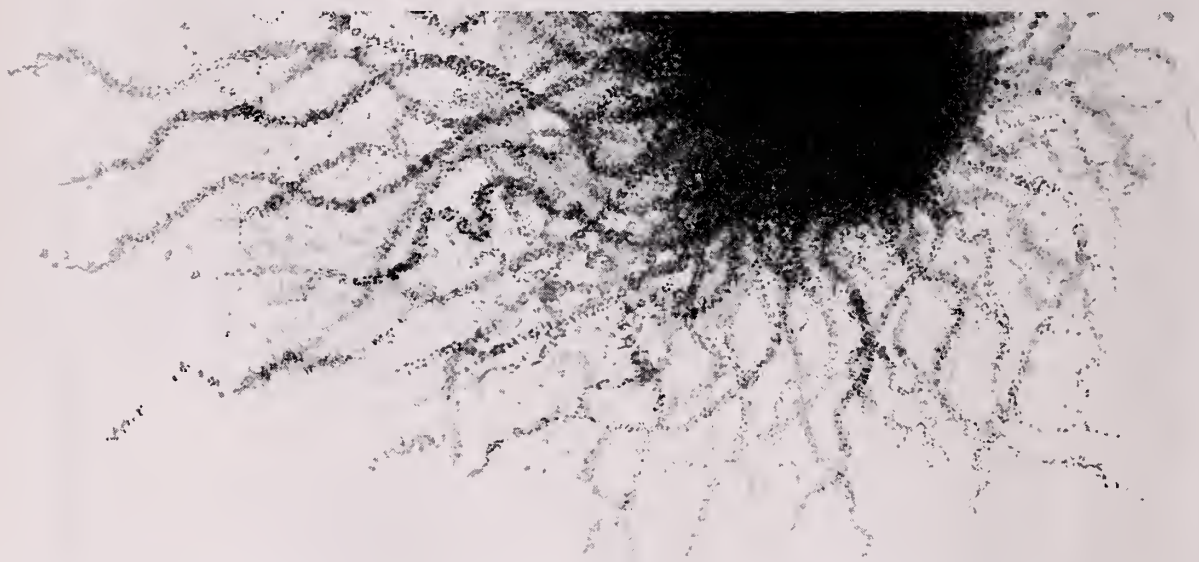
CANDIDA ALBICANS: NECESSARY EVIL?



How serious is monilial infection? It is hard to prove; but when host resistance drops, monilial infection can be very serious. Consider the problem of monilial infection generally. Two investigators postulate that secondary thrush of the bronchi caused by *C. albicans* may pave the way for bacterial invasion of the lungs.[2] Monilial pyelonephrosis in a young child presumably was related to a bloodstream spread of thrush from the alimentary tract.[3]

Thus, the physician browsing in the literature may wonder if *C. albicans* is not more pathogenic than he had thought. In fact, Seelig[4] concluded, after an exhaustive literature review, that this organism, only slightly pathogenic in high concentrations on the mucosa of the normal subject, increases markedly in pathogenicity when host resistance drops.

Antibiotics and increased candidiasis Almost 20 years of clinical experience has established the usefulness of the tetracyclines beyond question. All "... possess a wide range of antimicrobial activity against gram-positive and gram-negative bacteria, which overlaps that of penicillin, streptomycin, and chloramphenicol."[5]

But... monilial superinfection associated with tetracyclines and other broad-spectrum antibiotics persists. Indeed, the incidence of secondary candidal fungal infections associated with antibiotic therapy has continued to rise. Analysis of autopsies in a general hospital from 1919 to 1955 showed an increase in secondary fungal infections since 1947.[6] More yeastlike fungi have been isolated from pediatric patients during the antibiotic era.[7] In fact, although some investigators question the clinical significance of Candida identification in clinical studies, "... the preponderance of evidence indicates that the use of antibiotics is associated with

Monilial overgrowth continues to complicate tetracycline therapy...yet the usefulness of this broad-spectrum antibiotic is beyond question.

> "The tetracyclines are firmly established as very valuable agents in the therapy of a variety of infectious diseases."[1]

an increased incidence of candidiasis...."[4] Moreover, certain antibiotics in particular — among them the tetracyclines — have been implicated in a variety of superinfections.[8]

Benefits vs. risks

The tetracyclines are obviously far too valuable to be disregarded — in spite of fungal risks. But: *the risk of secondary monilial infection can be greatly minimized in the tetracycline therapy program.* The prophylactic use of an antifungal agent along with an antibiotic, long considered logical,[9] has been shown by clinical experience to exert protective effect against candidal superinfection.

Superior protection from monilial superinfection as demonstrated in the laboratory

In particular, Mysteclin-F, a combination of tetracycline with amphotericin B, an antimonilial that is significantly more potent *in vitro* against *C. albicans* and other Candida species than is nystatin,[10] is valuable in preventing monilial overgrowth. Amphotericin B has shown a high degree of activity *in vitro* against Candida species found in the intestinal tract. Moreover, it undergoes virtually no absorption from the gut, thus avoiding risk of systemic side effects.

Certain patients are particularly susceptible to monilial complications. They are: infants, the aged, the debilitated, diabetics, women (particularly during pregnancy), and patients receiving prolonged or high-dosage antibiotic therapy or corticosteroid hormones.[11] But, since it is impossible to predict infallibly which patients will develop monilial complications, Mysteclin-F is a logical choice whenever tetracycline therapy is indicated.

Is *Candida albicans* a necessary evil? Hardly, with Mysteclin-F.

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Available as: *Capsules in two potencies:* the equivalent of 250 mg. tetracycline hydrochloride with 50 mg. amphotericin B, and the equivalent of 125 mg. tetracycline hydrochloride with 25 mg. amphotericin B, both buffered with potassium metaphosphate; *Syrup* (125 mg. tetracycline [hydrochloride equiv.] buffered with potassium metaphosphate, and 25 mg. amphotericin B per 5 cc.); *Pediatric Drops* (100 mg. tetracycline [hydrochloride equiv.] buffered with potassium metaphosphate, and 20 mg. amphotericin B per cc.).

Contraindications: Hypersensitivity to either component.

Warning: If renal impairment exists, lower-than-usual doses are indicated to avoid systemic accumulation and possible liver toxicity; on prolonged use, tetracycline serum level determinations may be advisable.

Photodynamic reactions, although rare with tetracycline, may occur. Advise photosensitive patients to avoid direct sunlight.

Precautions: Watch for signs of secondary infection due to nonsusceptible organisms; discontinue drug or institute appropriate therapy if they occur. Use of tetracycline, particularly long-term use, during pre- and post-natal tooth development may cause discoloration of teeth.

During long-term therapy, perform periodic renal, hepatic and hematopoietic function studies. Increased intracranial pressure with bulging fontanels has been observed rarely in infants taking therapeutic doses of tetracycline.

Side Effects: Nausea, vomiting, and diarrhea.

For full information, see Package Insert.

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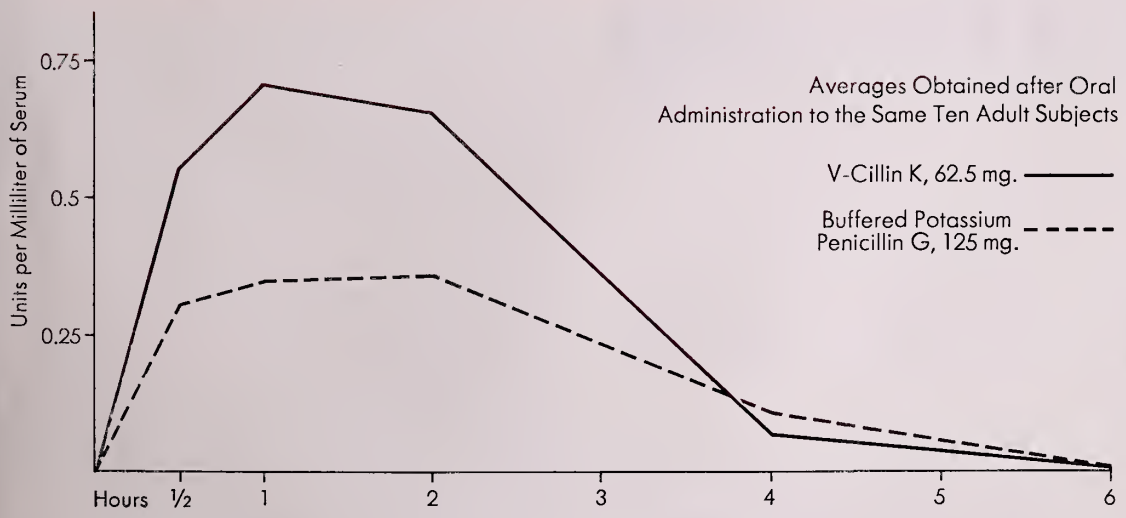
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med.,269 1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

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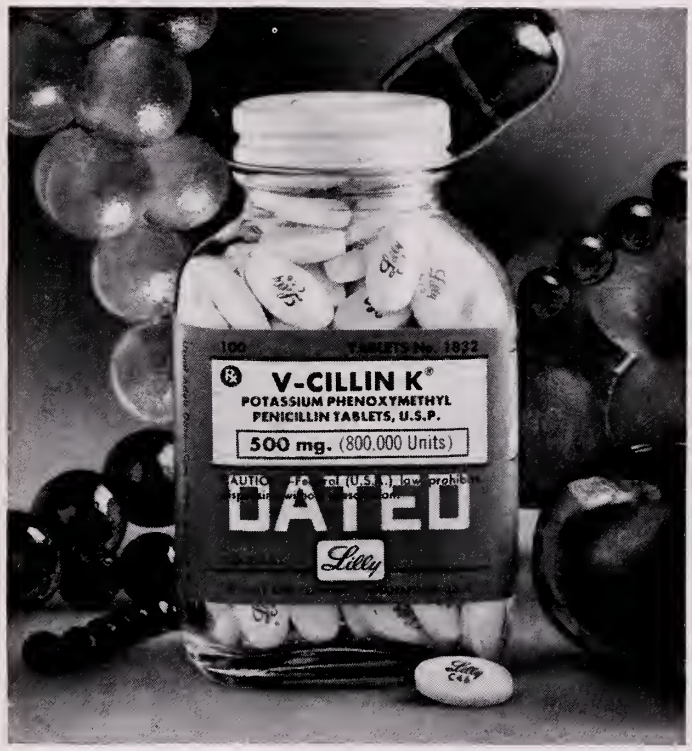

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V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy. Reactions occur more frequently in individuals with bronchial asthma or other allergies or in those who have previously demonstrated sensitivity to penicillin hypersensitivity reactions occur, the drug should be discontinued.

Adverse Reactions: Although serious allergic reactions are m less common with administration of oral penicillin than with intramu lar forms, skin rash, symptoms resembling those of serum sickness other manifestations of penicillin allergy may occur. When penicilli administered, measures for treating anaphylaxis should be rea available. Those include epinephrine, oxygen, and pressor drugs relief of immediate allergic manifestations as well as antihistam and corticosteroids for delayed effects.

The use of antimicrobial agents may be associated with the o growth of antibiotic-resistant organisms; in such a case, antibiotic ministration should be stopped and appropriate measures taken.

Administration and Dosage: For Tablets V-Cillin K and for V-C K, Pediatric, the usual dosage ranges from 125 mg. (200,000 un three times a day to 500 mg. (800,000 units) every four hours. Fo fants, the daily dosage may be 50 mg. per Kg. of body weight divi into three doses.

Beta-hemolytic streptococcus infections without associated ba remia may be treated with 200,000 to 400,000 units three times a Therapy should be continued for a minimum of ten days to prevent velopment of rheumatic fever and/or other serious complications. age for routine streptococcus prophylaxis in patients with a histo rheumatic fever or congenital heart disease may be 200,000 units or twice daily. When such patients undergo tonsillectomy, tooth ex tion, or other minor surgery, the prophylactic dose should be 50 units every six hours given two days prior to surgery and for two postoperatively. If oral medication is not feasible on the day of gery, parenteral therapy should be considered. Mild to moder severe pneumococcus pneumonia has been treated effectively 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be g every six to eight hours in conjunction with indicated surgical p dures.

For gonorrhea in males, 500 mg. (800,000 units) every six hour three doses may be employed, in females, 500 mg. every four hour six doses are recommended. Patients with a suspected lesion of syp should have a dark-field examination before receiving penicillin monthly serologic tests for a minimum of three months.

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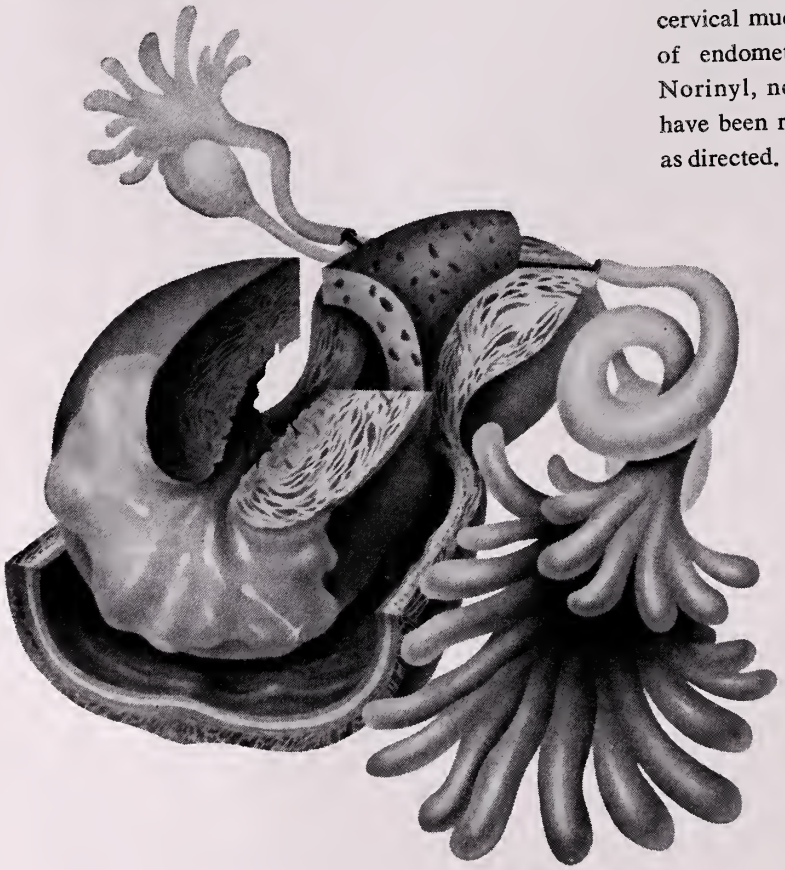

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no confusion about dosage

An unbreakable "confusionproof" package makes it easy to adhere to prescribed dosage schedule: individually sealed tablets numbered from 1 through 20 *plus* monthly calendar record enables patient to double-check dosage intake by day and corresponding tablet number.

Contraindications: Thrombophlebitis or pulmonary embolism (current or past). Existing evidence does not support a causal relationship between use of Norinyl and development of thromboembolism. While a study which was conducted does not resolve definitively the possible etiologic relationship between progestational agents and intravascular clotting, it tends to confirm the findings of the Ad Hoc Advisory Committee appointed by the Food and Drug Administration to review this possibility. Cardiac, renal or hepatic dysfunction. Carcinoma of the breast or genital tract. Patients with a history of psychic depression should be carefully studied and the drug discontinued if depression recurs to marked degree. Patients with a history of cerebral vascular accident.

Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.—mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism.

Side Effects: Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

References: 1. Council on Drugs. JAMA 187:664 (Feb. 29) 1964. 2. Bryans, F. E.: Canad Med Ass J 92:287 (Feb. 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, D. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14:402 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 5) 1962. 8. Kempers, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Maqueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association. JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. I.: Appl Ther 6:427 (May) 1964. 16. Newland, D. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

norethindrone—an original steroid from

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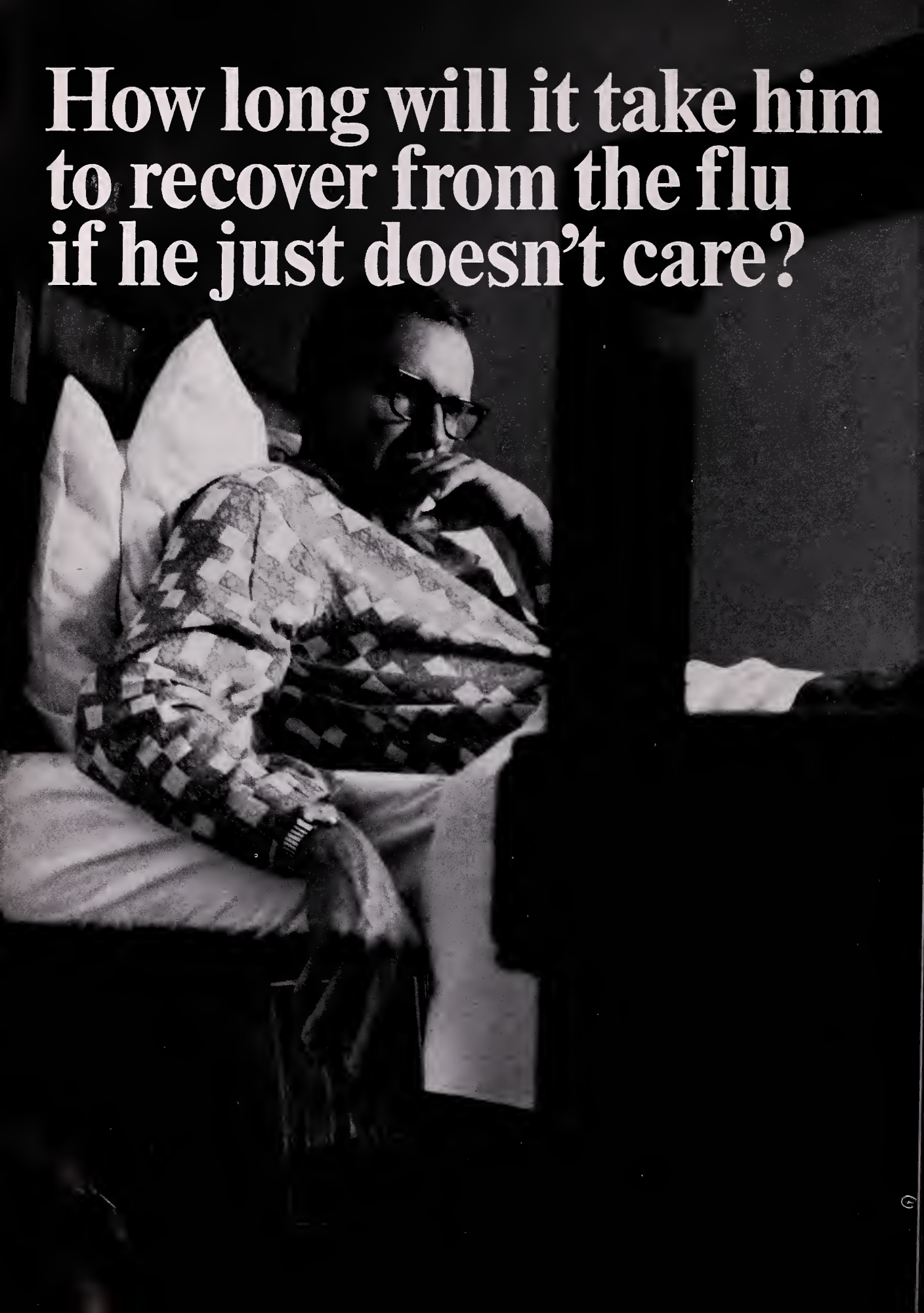
LABORATORIES INC., PALO ALTO, CALIF.

Norinyl® tablets

(norethindrone 2 mg. & mestranol 0.1 mg.)

for multiple contraceptive action

How long will it take him to recover from the flu if he just doesn't care?



Does he really care?
he alert, encouraged,
ositive and optimistic
out getting out of bed
nd back to work soon?
Or is he giving in to
e depressing impact
confinement?
When functional fatigue
mplicates convalescence,
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Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that so often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

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Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

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New
low-cost tetracycline/antifungal therapy

for broad-spectrum activity
plus specific antifungal prophylaxis
at significant patient savings

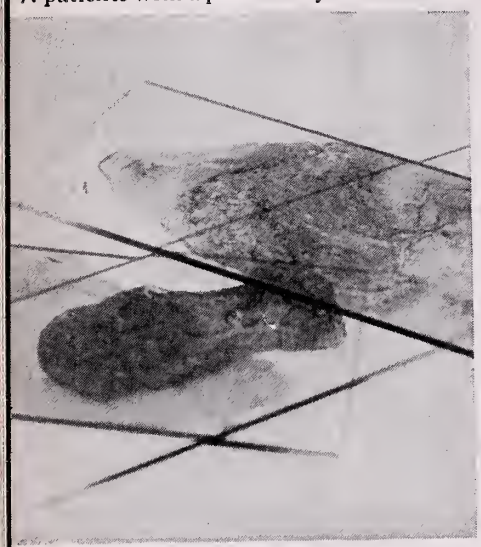
Whenever tetracycline is indicated in these candidates for Candida:

1. diabetic patients

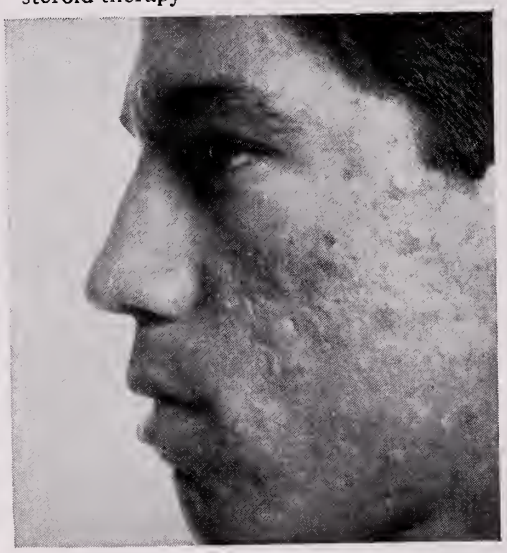
2. nonpregnant women with a history of recent or recurrent monilial vaginitis

3. elderly or debilitated patients

4. patients with a past history of moniliasis



5. patients on long-term tetracycline or corticosteroid therapy



BRISTOL THERAPEUTIC SUMMARY: For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfection may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule *q.i.d.* Continue therapy for 10 days in beta-hemolytic streptococcal infections. Administer one hour before or 2 hours after meals. *Supply:* Capsules, bottles of 16. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin.

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Division of Bristol-Myers Company
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Tetrex-F®

Each capsule contains tetracycline phosphate complex equivalent to tetracycline hydrochloride 250 mg. and nystatin 250,000 units

Tetrex-F is priced lower
than most
tetracycline-antifungal products.

Blood-glucose screening for all your patients?

...because "Abnormalities of glucose metabolism are among the [most common] encountered in clinical practice...."* Simple, quick, economical blood-glucose screening with DEXTROSTIX® Reagent Strips is practicable in every regular physical examination, emergency situation, and whenever hypo- or hyperglycemia may be of clinical significance – for "The precision and accuracy of DEXTROSTIX ...meet the need for an always available simple screening method...."* All that is required for screening with DEXTROSTIX is 60 seconds and a globular drop of capillary or venous blood. Abnormal readings will be a valuable aid to diagnosis; normals will help you establish an important baseline for future reference.

*Marks, V., and Dawson, A.: Brit. M. J. *1*:293, 1965.

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provides a clinically useful determination when performed according to directions†

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Now, now, Mrs. Forsythe, we've never lost a cold patient yet.

When she's experiencing acute discomfort from cold symptoms, it's small wonder the patient becomes distressed about her condition.

She will breathe easier when you prescribe Novahistine LP.

Novahistine LP is a long-acting decongestant that helps restore normal mucus secretion and ciliary activity—physiologic mechanisms which prevent infection of the respiratory tract. A dose of two tablets taken in the morning and repeated in the evening will usually keep air passages clear for 24 hours.

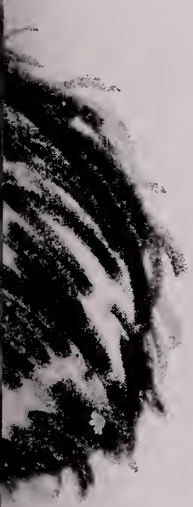
Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution patients who operate machinery or motor vehicles that drowsiness may result.

Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

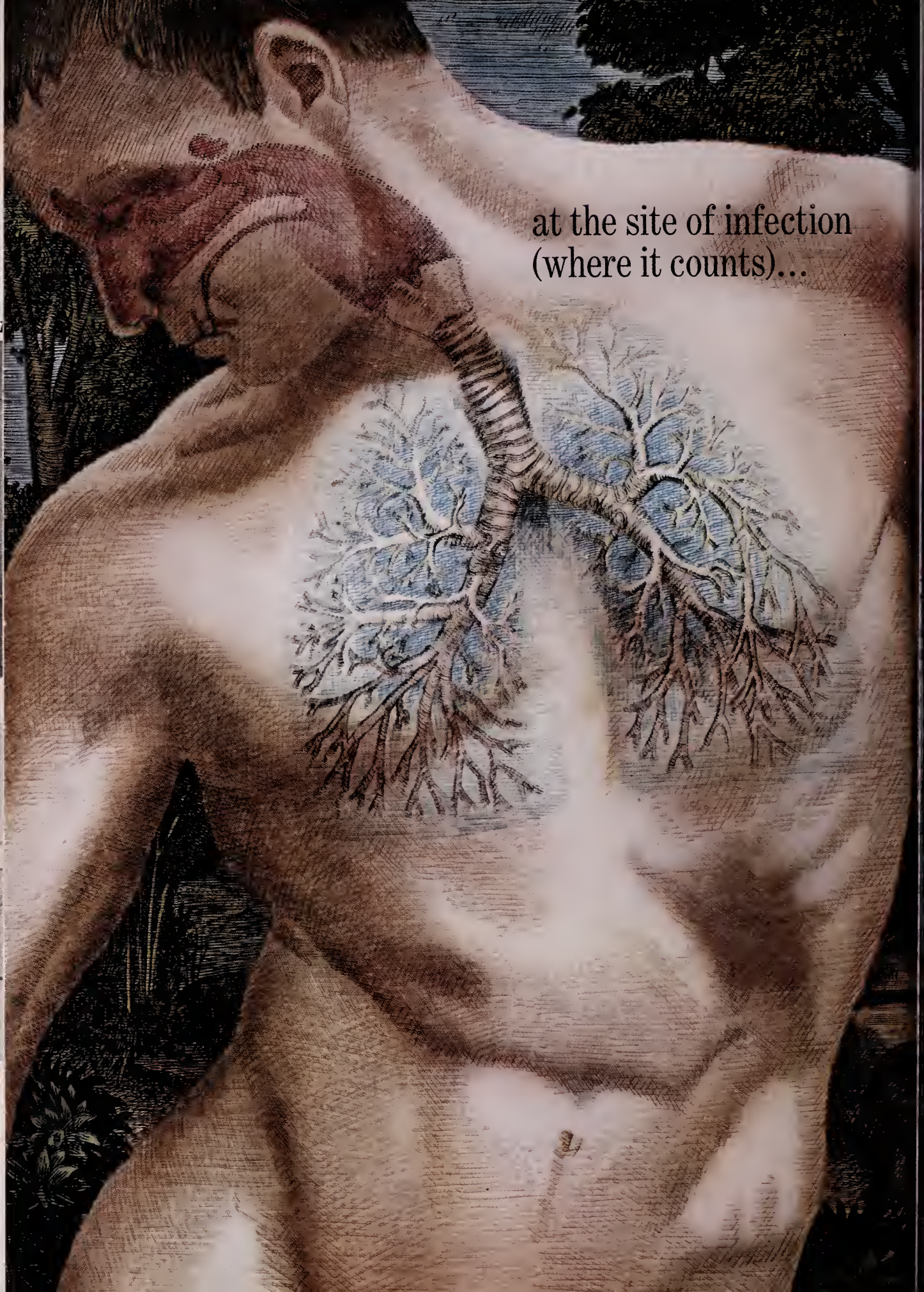
DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

NOVAHISTINE® LP

For relief of nasal congestion.



Saxon


at the site of infection
(where it counts)...

osone® provides more antibacterial activity han any other oral erythromycin

id stable, better absorbed... Ilosone oduces faster, higher, more prolonged od levels, even in the presence of food[1-3]

cause it is the most active form of oral thromycin, Ilosone can help assure sistently greater antibacterial activity he site of infection. Ilosone produces k antibacterial blood levels two to four es those of other erythromycin parations.[1,2] Not only are these levels ained earlier, but they are maintained much longer periods. Even the sence of food does not seem to affect activity of Ilosone.[1,3]

he treatment of patients with bacterial ections susceptible to erythromycin, sone has compiled an excellent rapeutic record. Since it exerts its atest activity against gram-positive anisms, it is particularly useful in mon respiratory and soft-tissue terial infections. Ilosone kills—not rely inhibits—streptococci, eumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone® Lilly

Erythromycin Estolate

e next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with pre-existing liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has not been reported in other patients taking prolonged courses of the medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, and patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of these patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels were determined in a group of fifty-four adults and children who took 250 mg. of Ilosone daily for an average of sixteen months as rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevation of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, were reported in 102 pediatric patients who received short-term (ten-day) courses of Ilosone in the treatment of streptococcus infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacteria flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of body weight, the usual dosage is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days are recommended. In the treatment of gonorrhea, patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg. (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base), in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc. size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages.

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964.
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962.
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
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FREE YOUR PATIENTS from
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***with* DICARBOSIL® antacid**

■ **effective neutralizing power**—Two tablets in vitro[1], provide nearly 2 hours' relief within effective pH range 3 to 5.5.

■ **pleasant taste**—A fresh mint flavor patients continue to enjoy, because with Dicarbosil's unique* formulation, chalky aftertaste is no longer a problem.

■ **exceptional economy**—Due to its high neutralization capacity combined with low cost (1¢ or less per tablet), Dicarbosil is within the reach of all patients.

1. Schleif, R.H.: J.A.PH.A., 46: 179,1957 *U.S. Pat. No. 3,062,714

Active Ingredients: Calcium Carbonate Precipitated 0.489 Gm., Magnesium Carbonate 0.011 Gm., Magnesium Trisilicate 0.006 Gm.

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ON PUBLIC RELATIONS

In scientific medical matters, we all have heard
Our time honored profession is considered superb;
But there is one phase where we can feel no elation
And that's in the field of public relation.

One thing that has caused our bright image to dim
Is because many doctors have a psychopathic whim
That results in the practice, strictly third rate,
Of habitually making busy patients wait.

The unbiased observer says this situation
Is badly in need of etiologic evaluation
Before the result becomes malignant inflation
Spread beyond the stage for effective ablation.

Why, oh why, should patients sit and wait
And add to organic disease an acute tension state?
There is no legitimate reason for such gross malfeasance;
Let us arrive at the causes and abolish the reason.

When planning, unusual problems, doctors fail to anticipate;
Consequently, they arrive at the office too late.
Although some patients the inconvenience tolerate;
In their subconscious minds, starts an insidious hate.

Office girls, when appointments on the book they schedule,
Have forgotten many things that they learned in school;
They neglect to apply a fundamental rule;
That adequate time must be allowed each case,
That the patients must be ready and in their place
So the kindly physician need not slow his pace.

Another feature we need to accentuate—
The doctor must know how to terminate
Each office visit on time and with tact;
Even the one with the verbose hypochondriac.
Yes, on time and with tact, also with determination,
Using care to preserve a good doctor-patient relation.

The crucial factor we are reluctant to state
Because it will the ego of many doctors deflate;
Some, rather than face this fact, are apt to debate
Because, cause and effect their minds won't relate.

The most rabid hound in this principality
Is the lack of an adequate personality
On the part of the physician with the pernicious trait
Of making his patients come and needlessly wait.

Now this revelation accurately puts
The cause of our trouble right at the grass roots.
Like the arsonist, kleptomaniac, and pathologic liar,
He resorts to asocial behavior to fulfill his subconscious desire.

Now if our good reputation continues to grow
We must use other ways of feeding our ego
Than scheduling patients on our daily slate,
Then submitting them to a detestable wait.

Paul Dudley Keller, MD
Salt Lake City, Utah

Phenaphen® with Codeine

the only leading compound analgesic that calms instead of caffeinates

Each capsule contains:

Phenobarbital (¼ gr.) ..... 16.2 mg.
(Warning: may be habit forming)
Aspirin (2½ gr.) .....162.0 mg.
Phenacetin (3 gr.) .....194.0 mg.
Hyoscyamine sulfate .....0.031 mg.
Codeine phosphate.....¼ gr. (No. 2),
½ gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

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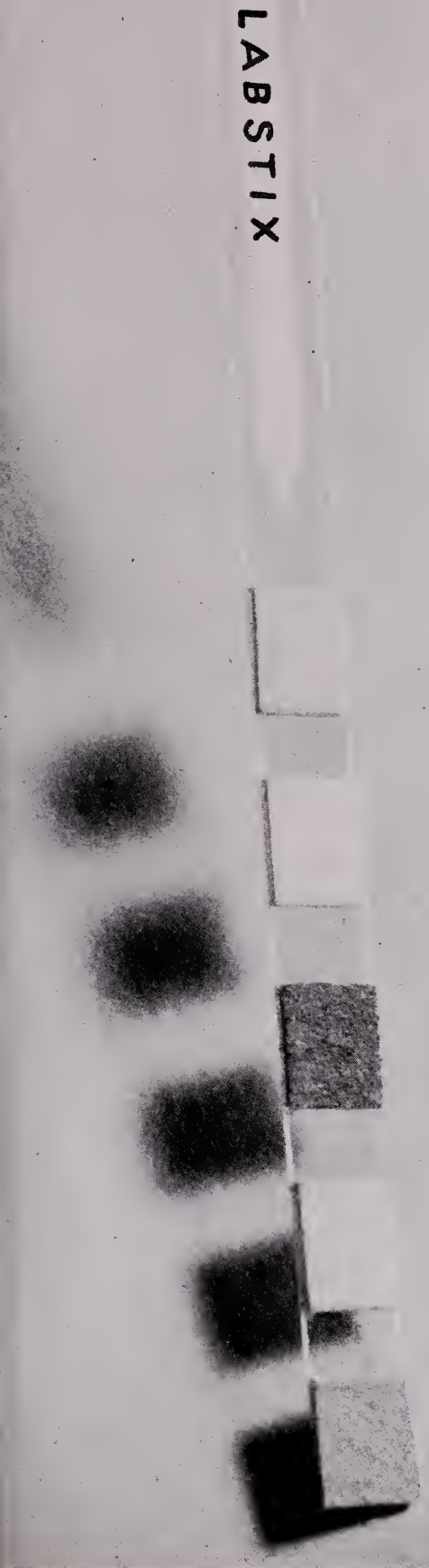
5 basic uro-analytical facts in 30 seconds



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...broadest urine screening possible from a single reagent strip

Urine test results with LABSTIX Reagent Strips can represent significant guides to differential diagnosis or therapy in many conditions. An unexpected "positive" may enable you to detect hidden pathology—long before more recognizable symptoms become evident. Negative results, which permit you to rule out abnormalities in a broad clinical range, can serve as baseline values for reference in future examinations. The 5 colorimetric test areas encompassed on LABSTIX Reagent Strips are:

pH—values are read numerically in the essential range of pH 5 to pH 9.

Protein—results are read either in the "plus" system or in mg. % in amounts approximating "trace," 30, 100, 300, and over 1000 mg. %.

Glucose—provides a "Yes-or-No" answer for urine "sugar spill."

Ketones—detects ketone bodies in urine—**both** acetoacetic acid and acetone. Reacts with as little as 5 to 10 mg. % of acetoacetic acid.

Occult Blood—specific test for intact red cells, hemoglobin or myoglobin. Results are read as negative, small, moderate or large amounts.

Now a Clear Reagent Strip of Firm Construction

...facilitates handling during testing procedure. Excellent color contrast made possible by the clear plastic strip, together with the clearly defined color charts provided, permits precise, reproducible colorimetric readings in all 5 test areas. A more definitive interpretation of uro-analytical facts is made possible.

Available: LABSTIX Reagent Strips, bottles of 100 (color charts are supplied with each bottle).

Ames Company, Inc., Elkhart, Indiana

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OFFICE OF THE GOVERNO
SALT LAKE CITY

CALVIN L. RAMPTON
GOVERNOR

Utah State Medical Association
42 South Fifth East Street
Salt Lake City, Utah 84102

Gentlemen:

As Governor of the State of Utah it gives me great pleasure to extend congratulations to the Utah State Medical Association for its sponsorship of the first Utah issue of the Rocky Mountain Medical Journal.

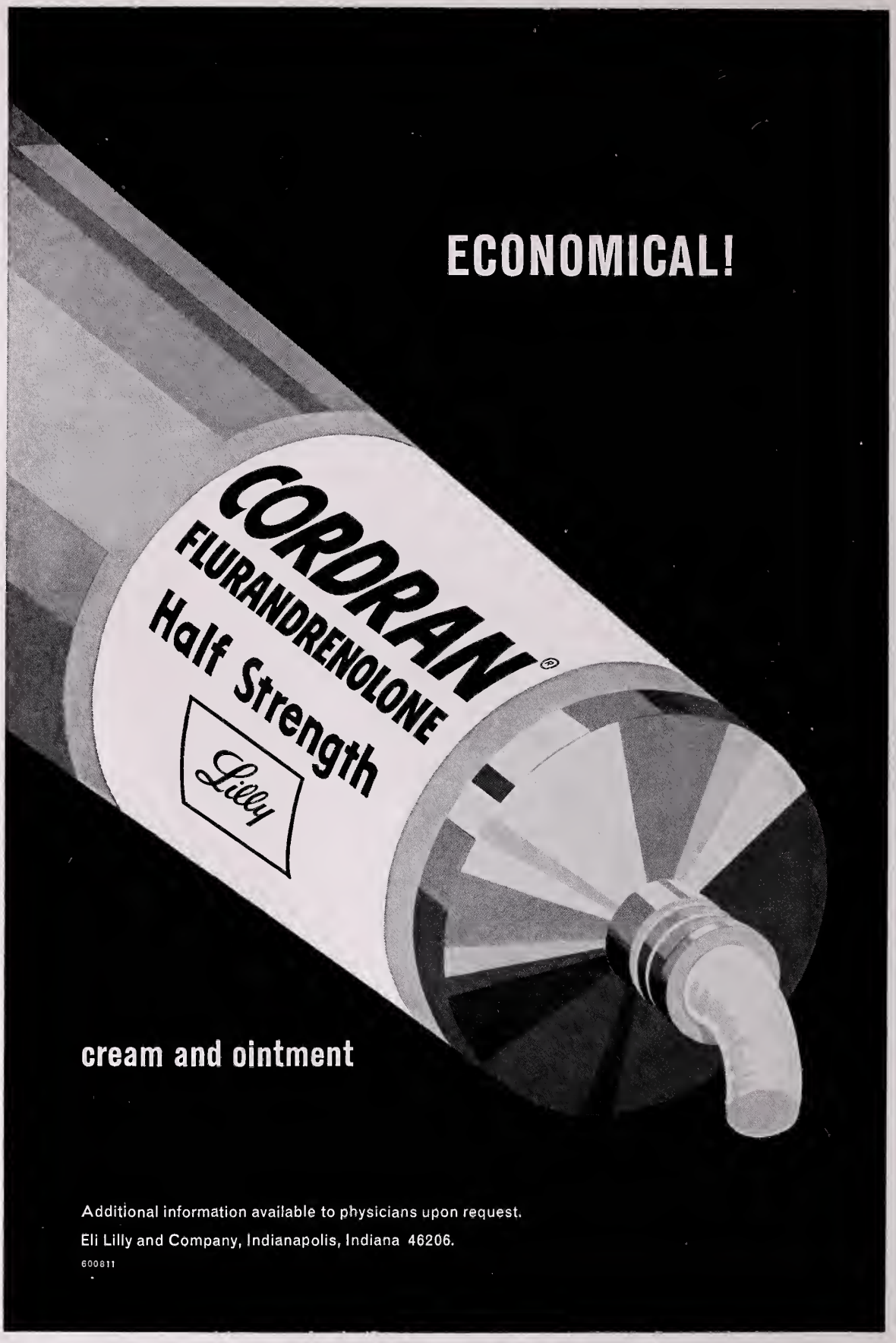
The people of Utah are proud of the part Utah plays in the advancement of medicine in the Rocky Mountain region, and in fact the entire country. We are especially proud of our College of Medicine at the University of Utah which prepares doctors, not only for our own State, but also for the surrounding area.

This pride extends also to the nearly 1,000 members of the Medical Association who are in private practice and who devote many hours of their time in working to make Utal a better and healthier place in which to live.

I pay tribute to the doctors of Utah for their past present and future contributions to the betterment of our great state.

Sincerely,

Governor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EDITORIALS

On Drug Testing

On August 30, 1966, James L. Goddard, MD, Commissioner of Food and Drugs, issued in the Federal Register a statement re-defining consent for use of investigational drugs in human beings. Formerly, the law (Federal Food, Drug and Cosmetic Act, Section 505 (i)) regulating use of investigational new drugs in human beings, required investigators to ". . . obtain the consent of such human beings or their representatives, except where they deem it not feasible or, in their professional judgment, contrary to the best interest of such human beings."

Dr. Goddard's amended version of the section quoted raises difficulties in defining: (1) "not feasible" to mean only situations where the investigator cannot communicate with either the patient (e.g., coma) or his representative; (2) "contrary to the best interest of such human beings," to mean those situations when informing the patient, to the extent required under the new definition of consent, would ". . . seriously affect the patient's disease status and . . . the patient's best interests would suffer if consent were sought"; (3) "consent" or "informed consent" to mean (in the course of some 170 words) that the patient knows as much about the drug and the investigation as the investigator. Consent must be obtained in writing.

The major threat posed by this edict is that of making impossible adequately controlled clinical trials of investigational drugs. The threat is real because: (a) ultimately, no test animal can replace the human for validating either effectiveness or safety of drugs intended for use in humans; (b) proof of efficacy and safety requires nullification of bias on the part of both investigator and patient. Bias is most effectively abolished by use of the double-blind experimental design in drug testing—neither investigator nor patient may know whether the agent administered is:

1. Active drug or placebo—the simplest situation for determining effectiveness and safety.

2. Drug A, B, C . . . Z of a group of similar, supposedly active drugs—the situation for comparing effectiveness and safety.

Consider actual operation of the new "informed consent" requirement. In the double-blind trial situation of active drug compared with placebo, it must be fully explained to the patient that of two medicines for treatment one is definitely of no value and is harmless, while the other may be of value and may also provoke undesired effects. Will patients accept this situation? Even if attested by signature, will there be commitment deep enough to persevere in trial to the production of actual evidence regarding efficacy and safety?

Whether from disease or drug, there will be many, many instances in which patients will be uncomfortable; some will not do well and some will die. Always, adequate clinical trial will be at the mercy of the judgment of the patient or the patient's representative. Despite the investigator's best efforts at informing, this judgment will at best be prejudiced by inadequate medical knowledge, by the illness itself, by awareness that the drug being given may either be of no value at all, or, if active, may itself cause sickness.

The application of this most recent, and perhaps crippling, restriction to the conduct of clinical investigation is paradoxical, in timing at least. Now that concern with proof of safety of drugs for use in humans is firmly established, the Food and Drug Administration has turned its attention to the other side of the drug coin, namely: efficacy. Under a contract for $834,000 from the Food and Drug Administration, the National Academy of Sciences, through its National Research Council, Division of Medical Sciences, has undertaken in the next 18 months to evaluate the effectiveness of some 3,000 to 4,000 drugs introduced in the years 1938-1962. The irony lies in the fact that the best, most reliable evidence regarding efficacy is derived from double-blind clinical trials of the very kind Dr. Goddard's dictum of last August makes virtually obsolete.

Paul D. Hoeprich, MD

Slovenly Medical Terminology

The tools of our profession are becoming increasingly more refined and precise and it behooves us to take good care of them. The rusty scalpel, the transducer with poor frequency response, the leaky burette—these we reject quickly as unworthy instruments. The strange fact is, however, that we abuse and neglect our most important tool — language — with astonishing frequency.

The medical literature appalls many of us because of its staggering volume, but this is a matter beyond our control. Others are dismayed by the deadening and stereotyped pattern of its style ("In recent years investigators have become increasingly interested in . . ."), the ubiquity of cherished cliches, and the general lack of style and precision.

We should all become irate when the precision tool is used imprecisely. "Essential" is so ingrained in our professional jargon that we no longer blush at its meaninglessness. We play anagrams with a large number of ignorance-hiding prefixes and suffixes, spawning such curious entities as "pseudo-lupoid-like nephritis." Consider also the common practice of making verb-forms of eponyms, producing such monstrosities as "The patient Cheyne-Stoked" or "The ECG showed the patient to be Wenchebaching." Carrying the latter example one appalling step further, the cardiologist may refer to retrograde second-degree AV block as "Bachewencking."

Even more often we simply use the wrong word. "The patient awakened in the morning feeling nauseous." (Only his wife would know for sure.) This word is misused so often that an anonymous poet felt compelled to write:

> Poor pedantic mossy us—
> Our gorges rise at "nauseous."

Medical students and house officers are allowed to mangle the English language with hardly ever a cry of protest from members of our "learned" profession. Surely the fault is partly ours. The tool badly needs polishing.

Alan E. Lindsay, M.D.

Doctor Training for The Great Society

Up to now we have tended to be comforted by the fancy that, amid the tumult and confusion of these storm-swept times, the American Medical Association has usually taken positions noteworthy for reason and a commendable degree of perceptiveness. Admittedly, we have been a bit abashed by some of the recent kooky pictures on the cover of our overshadowing contemporary, the Journal of the American Medical Association. A case in point was the colorful concoction depicting an artist's rendition of the ocular fundus after partial retinal detachment. This imaginative opus entitled "Uncertain Sunset" portrayed two lines of opthalmoscopes set along the edge of tears which had caused billowing of the retina, symbolizing the importance of careful observation of the lesion, while two turtles plodded along the strip of intact retina to "mark the slow road to recovery." (Cover picture, JAMA, July 25, 1966.)

Such slightly frivolous whimsy seems more suited in tone to certain commercial brochures and throwaway medical journals than to the dignity we expect from our national scientific journal. From beyond the grave, however, the ancient Romans remind us that questions of taste offer no sound basis for argument, so we have no right to be too critical. It can easily be imagined that the younger members of the Chicago editorial staff are eager for a fling, and there is evidence that youth often sees more in contemporary art than is apparent to their elders.

What really shook us up, AMA-wise, to borrow from the current vernacular, was the recent report of a committee of 13 members chosen by the AMA to assess the status of medical education in these United States, and to set the course for the training of the physician of tomorrow. According to newspaper reports, it appears that the AMA, in sanctioning the project and choosing its committee, decided to assign this task mostly to persons outside the medical profession. Many physicians will consider this a naive and reckless decision. After all, it seems scarcely necessary

to point out the extreme unlikelihood that the engineering profession, to take a random example, would call in a group of doctors to tell them how to design and construct a Verrazano Bridge, or how to train the kind of men who can do it.

Having started with such an impractical approach, it is not too surprising that the commission's report has a quaint Alice-in-Wonderland quality. Our newspaper says the panel recommends that the general practitioner is to be replaced in the future by a "primary physician" or "medical coordinator." He appears to be conceived as something of a combined sociologist and public health worker, not particularly concerned with the "episodic handling of acute conditions." It sounds as if each citizen is to be provided with a local Ann Landers, available at all times for counseling, but obliged to call the doctor at once if the going gets tough. Furthermore, we are told that the committee recommends abandonment of the traditional internship. "It is the most wasteful year of training," says chairman John S. Millis. "It duplicates the first year of residency and the last year of medical school."

One wonders whether we may be confronted here by a suitable application for the jocular aphorism about an expert being any man away from home. We know a host of medical men who will profoundly disagree with these opinions of the panel. If lifelong, incessant involvement in the problems of medicine and medical education offers a basis for judgment in such matters, then these physicians are at least as fitted to have a hand in planning the training and sphere of the future doctor as are the members of the AMA-sponsored non-medical 13-man Commission.

Richard P. Middleton, M.D.

National Medicolegal Symposium to Be Held in Miami Beach

Miami Beach has been selected as the site for the 1967 National Medicolegal Symposium jointly sponsored by the American Medical Association and the American Bar Association.

To be held at the Fontainebleau Hotel March 9-11, the meeting is one of the most significant on medicine and the law and is expected to be attended by 2,000 physicians and lawyers.

The national forum promotes mutual knowledge, appreciation, and understanding between the two professions. It affords an opportunity for lawyers and doctors to discuss matters of common interest and to seek solutions for interprofessional differences.

Outstanding spokesmen of both professions will present stimulating and enlightening information and opinion on four major subject areas with 17 specific topics. Subject areas are:

—Roadblocks in interprofessional communications.

—The physician as a client.

—Legal rights of the mentally ill.

—Legal therapy for health-care problems.

Among the topics are compulsory court attendance, compensation for the medical witness, medical evidence in jury trial, "battered child" laws, and combatting health-care frauds.

The meeting will start at 1 p.m. Thursday, March 9, and will conclude at noon Saturday, March 11.

Registration fee, which includes a reception and a copy of the proceedings, is $30.00.

Advance registration and additional information may be obtained by writing Law Division, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

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Highlights of early surgery in Utah*

Richard P. Middleton, MD, Salt Lake City

FOR THOSE who have time and interest for a systematic survey of the rise and progress of surgical practice in Utah since the first settlement in 1847, I heartily commend a highly readable volume entitled "Of Medicine, Hospitals and Doctors." Gathering the data and writing the book was for many years a major hobby-project of the late Dr. Ralph T. Richards, former senior surgeon of the Salt Lake Clinic, well remembered by most of you. He worked long and hard at it and, in 1953, published by far the best compendium of source material in this field. It is well worth a place on the library shelves of any Utah physician. I hope that by generous cribbing from several source materials, including Dr. Richards' book and a couple of autobiographic sketches, I may be able to recapture a bit of the atmosphere of early-day Utah surgery (and incidently of medicine, which is so inseparably bound with it).

For our purposes, the surgical history of Utah begins with a period of 25 or 30 years which might be called the pre-hospital or even pre-medical period, coinciding by chance with the life-span of Brigham Young in Utah. This era was marked by the almost total absence of well-trained medical men in the territory of Utah and by the relative indifference or even mild hostility of the people toward those who were active in the medical field. Their attitude was not necessarily unintelligent in view of the meagerness of what most so-called doctors then had to offer.

Brigham Young was unquestionably a master organizer and a man of enormous drive and sagacity in temporal affairs, who resolutely pushed his ever-increasing stream of immigrant converts away from Salt Lake City into all fertile or promising valleys in Utah and often far beyond. According to Dr. Richards, in 1871 there were about 18,000 people in Salt Lake City, but the number in the 267 outlying Mormon settlements had already reached the astounding total of 70,000, or practically 85 per cent of the territory's population. It appears that at this time there was not a single graduate of a regular or so-called "allopathic" medical college in the entire area. There were, however, several Botanical or Thompsonian physicians, one of whom was Willard Richards, Ralph's grandfather, who was among the most prominent of the early Church leaders. Willard Richards had paid $20 for a diploma that attested he was entitled to be called Doctor and had the right to "administer, use and sell the medicine secured by Samuel Thompson by Letters Patent from the President of the United States." There was further provision that the "rights" were good for one year only. It thus appears that the current vogue of requiring all of us

Fig. 1. First Quarters of St. Mark's Hospital, a converted Adobe House on the corner of Fourth South and Fifth East. This was the First Hospital in Utah, and also the First in the Intermountain West.

*Adapted from a paper delivered before the Salt Lake Surgical Society.

laboriously to fill out a new form each year for renewal of staff membership has long historic precedent in Utah.

The guiding principles of the Thompsonian cult were said to be "puke 'em, sweat 'em, and purge 'em." This limited and rigorous program never had any great vogue among the pioneers. They turned rather to faith and the scriptural injunction for the laying on of hands. On August 31, 1875, Brigham Young, in a tabernacle sermon, discussed the care of sick children in these words, "Instead of calling for a doctor you should administer to them by the laying on of hands and anointing with oil, and give them mild food and herbs and medicine you understand." In his last years, Brigham Young came to respect the function of trained physicians in treating the sick. He employed doctors to attend members of his family and himself and provided money for the medical education of several young people in Eastern schools.

Elderly men and their families not infrequently ask today what was done before the advent of prostatic surgery for urinary retention. Brigham Young's case is of interest in this respect, since his last surviving son told me his father was in complete retention and required catheterization for perhaps the last 10 years of his life. He died in 1877, before the Listerian era, so the catheter was obviously never boiled. Brigham Young died of a febrile illness with abdominal pain, which some have suggested was acute appendicitis. In view of the comparative rarity of appendicitis in the aged and the inevitable severe urosepsis accompanying prolonged catheter life in the pre-aseptic era, is it not more probable that he died of acute pyelonephritis?

The small demand for physicians and the short period of training required to qualify for practice in the very early days of Utah caused some doctors to regard the profession as a hobby or sideline. Dr. Willard Richards, apostle, Thompsonian physician and first editor of the *Deseret News,* wrote as follows in the *Deseret News* of September 18, 1852:

"Two physicians have removed to one of our more distant settlements and gone to farming; three more have taken to traveling and exploring the country; three have gone to California to dig gold, or some other purpose; and one has gone to distilling; and we are beginning to get some alcohol, which is desirable for gentlemen's shoe-blacking, hatter's water-proofing, chemical analysis, washing the bodies of the well to prevent sickness and the sick that they may be made well, when such there be. Those physicians who remain have very little practice and will soon have less (we hope)."

Scattered through the territory in this early period were a number of shrewd and stalwart characters with meager training and varying degrees of aptitude who endeavored to treat fractures and injuries, leaving childbirth to the midwives and the care of the sick largely to the Relief Society sisters. Some of them were known as "natural-born bone-settlers." One of these early practitioners, Dr. Priddy Meaks, came to Utah in 1847 and soon moved to Southern Utah, where he practiced assiduously for the last 37 years of his life. He left a very complete journal of his activities, which has been published by the Utah State Historical Society.

Fig. 2. Original Holy Cross Hospital, located on Fifth East Street.

When my father began to practice in Cedar City, in 1894, he found in Beaver City a splendid old character named Dr. John Ward Christian, who was a dignified last vestige of this era. Being a youth of intelligence and vigor, Dr. Christian had qualified both as a doctor and as a lawyer before migrating to the West. He had been called up for military duty in his native state at the outbreak of the Civil War. The examining physician heard a cardiac murmur and rejected him. He was sufficiently impressed to

take a little digitalis leaf each day for the rest of his life. Either the Civil War examiner was a poor clinician or the digitalis plant has miraculous leaves: When Dr. Christian finally died he was within five months of being 100 years old!

Early-day surgery of the modern type grew out of the problems of general practice —the typhoid patient with perforation and peritonitis, the gunshot wound, the peritonsillar abscess, the strangulated hernia, the youth with acute appendicitis. Beginning soon after 1890, the more studious and aggressive practitioners, even in some smaller communities of Utah, were practicing with increasing respect for antiseptic requirements, a type of surgery which, within its more limited range, was a reasonable facsimile of what goes on in our hospitals today. Most of these early modern Utah surgeons had been graduated from 3-year medical courses and had gone into practice with no internship but, by wide reading of medical literature and prolonged visits at noted surgical centers, those of them with the knack and the determination to become surgeons succeeded very well.

To recapture the flavor of the life of the general practitioner who lifted himself by his own bootstraps to become the surgeon of Utah in the period before and after the turn of the century, it may be of interest to quote from written reminiscences, first of Dr. Ezra C. Rich, pioneer surgeon of Ogden and secondly of my father, Dr. George W. Middleton. Dr. Rich, who died in 1948, published his memoirs in the *Rocky Mountain Medical Journal* of January, 1953, under the title "Early Practice of Medicine and Surgery in Ogden."

Dr. Rich was a man of affable personality and excellent endowments who began to practice in June, 1894. He traveled by horse and buggy and sometimes when the roads were very muddy, on horseback. He remarks that contagious diseases were very prevalent. "A family of county patients by the name of Osborn, at 350 28th Street, had diphtheria. Antitoxin for diphtheria had first been put on the market in 1894, and I had read of the beneficial results of this antitoxin in the AMA Journal. Commissioner E. W. Wade, in charge of the county sick, was contacted, and he readily ordered antitoxin by telegraph. It was not obtainable in Denver or San Francisco, but some was found at Mulford's in Chicago. We were told there had never been any in this territory. It came by express, but by the time it arrived here one Osborn child had died and another was sick with diphtheria. The antitoxin came in ounce bottles, one thousand units to an ounce. One ounce was given to Thomas S. Osborn, a child of five, September 7, 1895. He recovered and is now living in Ogden. This was the first antitoxin given in the Utah territory and I believe the first given in the West. It is my belief that 1,000 units of that antitoxin was as potent as 10,000 units of what we use today."

In 1895, Dr. Rich operated twice for huge ovarian cysts, weighing 42 and 48 pounds respectively. The patients recovered and lived to a ripe old age. He remarks, "It must be remembered this was years before the days of rubber gloves, catgut sutures and autoclaves; marine sponges were used entirely. Marine sponges, as you know, are vegetable tissues and cannot be boiled and must be sterilized with antiseptics. They were splendid to operate with, but difficult to sterilize. I selected some nice flat ones of different sizes, washed the sand out with warm water, then put them in a jar of permanganate of potash solution for 48 hours, washed them again in warm water, and then in a jar of oxalic acid solution to take out the permanganate. After this, they were put in a jar of 5 per cent carbolic acid solution till they were ready to use. The room selected in the four-room cottage was thoroughly cleaned and the walls wiped off with bichloride solution. The operating table was a pair of carpenter trestles with boards on them and blankets on the boards and a boiled sheet over it all. The sheets used to drape the patient were boiled and then immersed in bichloride solution and put on the patient while still wet. The abdomen was prepared the day before, a wet bichloride dressing being applied.

"The first appendix operation in Ogden was done by Dr. Perkins. I did the second one in the spring of 1895. The man is still living. These early cases were all cases of appendiceal abscess.

Fig. 3. Early photograph of L.D.S. Hospital (probably 1904). Although now unrecognizable, this building still exists as the central core of the present vastly expanded institution.

"In 1897, a hospital was rented by a group of six Ogden doctors and opened its doors to all practicing physicians in the city and county. The terms were reasonable—$10.00 a week for ward patients and $15.00 per week for private rooms. This included room, board and nursing care.

"In 1904 we removed the first prostate gland done in Ogden. The patient was an old man with almost total retention of urine, suffering terribly. The operation was done in a private home with spinal analgesia (tropococaine). All prostate operations at that time were done through the perineum.

"Dr. Osgood and I bought the first x-ray machine in Ogden. It was a static machine which occupied a space 8 by 10 feet, and we sometimes gave ten-minute exposures for a hip-joint picture. When the picture was finished it was rarely of any benefit.

"The first blood transfusion done in Ogden, I did at the Dee Hospital, February 9, 1913, to Mr. Samuel Price of Malad, Idaho. Mr. Price, while working in a saw-mill near Malad, was wounded in the knee with a circular saw. This wound did not enter the knee-joint, but became infected and when he came to Ogden, the wound was wide open and bleeding. We dressed the leg wound and tried to clear up the infection, but it continued to bleed, and he began hemorrhaging from the nose, gums, kidneys, and even from the intestinal tract. He became anemic and it was easy to see that he was slowly bleeding to death. I had never done or even seen a blood transfusion, but had read of the marvelous results obtained in cases of hemorrhage. One Sunday morning I went to the hospital; he had been bleeding profusely through the night. His lips were white and his ears were so pale that light showed freely through them. It was apparent that if anything was to be done it must be done quickly. This was several years before we knew anything about typing of blood and therefore no thought was given to compatibility. He had a brother who volunteered to be donor. We had no instruments especially made for blood transfusions, so we took some small glass tubing and with a gas flame drew it out to a point, filed it off and connected the two glass tips with a short rubber tubing. This was all paraffined carefully and then the donor's radial artery was dissected and the recipient's brachial vein was dissected. One of the glass tips was placed in the donor's radial artery and the other end in the vein of the recipient. The ligature was then taken off the artery of the donor and blood flowed freely into the recipient. While receiving the blood, the color came into his lips and ears and it was apparent that he was getting great benefit from the blood. We had no method of measuring the amount taken, but we let the blood flow until the donor became faint. The patient did not have any reaction to the transfusion. By the next morning the bleeding had entirely stopped and he was like a different individual. He is a well and healthy man at the present time."

My own father's unpublished reminiscences, written mostly after his retirement, give an interesting picture of early-day rural

practice in Southern Utah (Cedar City). He started the same year as Dr. Rich, 1894, and transferred his activities to Salt Lake City in 1907. Let us begin with some glimpses of a medical school in the early 90's:

"Those were the days of the so-called resurrectionists or, in less florid language, the body-snatchers. Dissecting material was at a premium and not infrequently graves were robbed to furnish the necessary cadavers. The colleges said nothing, but paid the price and pickled the bodies away where they would not be likely to be found. On one occasion at the school which I attended, but previous to my time, a group of eight students was assigned to a dissecting table. When they were all assembled and the sheet was removed from the cadaver one of the boys fell over in a faint. Investigation showed that the body they proposed to dissect was that of his own sister, which had been stolen from her recently sealed grave.

"In the early nineties antiseptic surgery was still debatable and aseptic surgery was just being born. It was a common thing to see the surgeon hold the scalpel in his teeth between acts, and take hold of the close-hanging skeleton to illustrate some point of bone anatomy. Rubber gloves were unknown and street clothes were still worn by the operators. When they did wear big aprons to protect their clothing, these were not sterilized.

"Swift surgery, a hangover from the pre-anesthesia days, was the rule. The surgeon would cut like greased lightning and students stood on tiptoes to try to follow the consecutive steps of the dramatic performer. He never seemed to stop to stanch the bleeding until he got through, and the arteries would spurt to the ceiling. A surgical operation in those days was a gruesome thing.

"When I received my license to practice, I took a suite of three rooms for an office in Cedar City and hung out my shingle. I was the first physician to settle down regularly in that town and my 1,200 fellow townspeople were pessimistic about my future and doubtful about my ability to earn a living. I began with riding-horses and then bought a carriage for the long tiresome day-and-night trips over bumpy roads through primitive country. As my time became more valuable, I used the telegraph line to arrange relays of fresh horses at intervals of about 10 or 12 miles. The telegraph operators all became my friends and they would order my dinner in a town ahead so I would not have to lose any time on the frequent tedious trips. From the first I practiced surgery, limiting myself to such operations as came within the domain of my knowledge. Looking backward now more than 40 years, my greatest satisfaction is the fact that I seemed to know instinctively my limitations and did not undertake things I could not carry through successfully.

"Having no other physicians or trained nurses to assist me, I taught the fundamentals of asepsis to young women of the locality who wished employment. Cultures were made from their sleeves and from under their fingernails and then I demonstrated with the microscope the growths obtained. These intelligent young people soon became conscious of the fact that bacterial life abounds everywhere. I took a good level-headed farmer and taught him to give ether and chloroform. It was amazing the way these young assistants took to the work and the splendid help they were soon able to render.

"I eventually started a small hospital, but I was obliged at first to do my operating in private homes, utilizing domestic furniture for equipment. The table on which my patient was placed was not infrequently the dining table of the family and the cooking utensils were variously employed to sterilize instruments and dressings. Often I had to stand in the way, like the angel with the flaming sword before the Garden of Eden, to keep multitudes of lay visitors from soiling my sterile linen or contaminating my instruments. As many people as could pack into the room would crowd in and the windows would be darkened by the heads of inquisitive spectators. Not infrequently one and sometimes several would fall in a faint while the operation was in progress. Often I had to utilize my spectators as assistants. It is amazing to me now to remember how well these farm people acquitted themselves at tasks that were entirely new and dramatic to them.

"Early in my practice I received an urgent distress call from a town 20 miles away, where I found a little girl of 6 who had got something down her windpipe that was causing great and alarming distress. She was black in the face and it was evident there was no time to lose. I hastily sterilized my instruments and linen. I was obliged to coach two farmers who had never seen chloroform before in giving the anesthetic. Another farmer was scrubbed up and adorned with a sterile apron to hold retractors and act as assistant. Just as I got the windpipe laid bare, the child ceased to breathe, probably from an over-dose of chloroform. I quickly plunged the scalpel through the trachea and severed two or three rings. Then, with the farmer-assistant holding the edges apart with artery forceps, I proceeded to do artificial respiration and revived the patient. After breathing was re-established, I put a probe down the windpipe and located a metallic substance. With the aid of a long slender forceps, a large hooded eyelet was brought up, which had been part of the fastening apparatus of a man's shoe.

"The trachea was swollen and full of mucus. When I allowed its edges to fall together difficult breathing and cyanosis returned. Having no tracheotomy tube, I resorted to the expedient of fastening a string of heavy Chinese silk to each edge of the incised windpipe, tying them together around the back of the patient's neck. This kept breathing normal. After the edema subsided, I was able to remove the silk cords and stitch the parts together. She made a good recovery and has been relating the story of her escape for 35 years. There was no extraordinary skill about this, but the dramatic element appealed so strongly to those who witnessed it and assisted with it that they wrote letters to their friends in every direction, heralding my name far and wide.

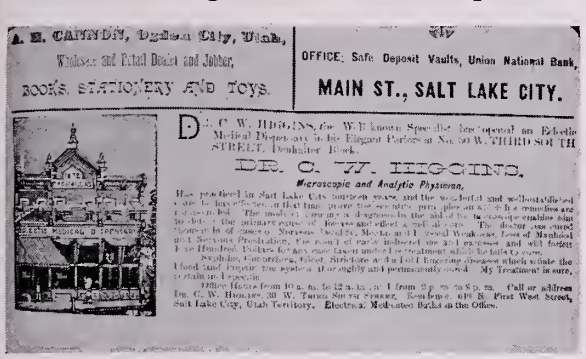
"I went through medical college without seeing an operation for appendicitis. Reginald Fitz of Boston had startled the world by making the statement that nearly all inflammation in the right lower abdomen was really appendicitis at the beginning, but the profession was not quick to act upon his wise generalization and there were still descriptions in leading textbooks of typhlitis, paratyphlitis and perityphlitis. I saw patients suffering with the group of symptoms which we called inflammation or obstruction of the bowel, most of whom went on to a fatal issue with only expectant treatment. One young chap who came under my care went through the classic syndrome of peritonitis and died. I begged the parents to let me do a post-mortem and they consented. The abdomen was full of pus and when I examined the appendix it showed a perforation. I began to get wise. My first operation for appendicitis was entirely successful and after this patients with appendicitis were mostly saved by operation except the ones that had been neglected so long they already had peritonitis."

The early surgeons in Salt Lake City had the advantage of more adequate hospital facilities than their colleagues in smaller communities. The history of early surgery in Salt Lake City is largely implicit in the story of the three large voluntary or church-supported hospitals—St. Mark's, Holy Cross, and L.D.S. Hospital. St. Mark's is the oldest of these, having been founded in 1872 in a small rented adobe house on the corner of 4th South and 5th East. It was the first hospital in Utah, as well as in the Intermountain West. In 1876 the hospital moved one block north, where a brick building was purchased, doubling hospital capacity to 12 beds. The hospital was organized chiefly for the care of industrial casualties from the mines and smelters and one of the main problems was lead poisoning. This was the heyday of the famous Emma Mine at Alta, where the soft ore containing a high percentage of lead was mined under very dusty conditions. Dr. John F. Hamilton was the first and only staff member at St. Mark's for 20 years. He was graduated before the days of antiseptic surgery and he never accepted the teachings of Lister, but he had an honorable career.

In 1893, St. Mark's Hospital was moved to its present location, the decision having been strongly influenced by the opinion of a noted Boston chemist, Mr. Charles T. Jackson, that analysis of the waters of the Warm Springs in North Salt Lake showed them to have valuable therapeutic properties. Through the

example of famous European spas, balneotherapy was then in high esteem, one of its most noted exponents being Dr. Simon Baruch of New York City, father of Bernard Baruch, the financier.

Dr. Wayne Babcock, outstanding surgeon of Philadelphia, was one of the first interns in the new St. Mark's Hospital. He recalls that "instruments were boiled and bichloride or carbolic solutions used. No masks, caps or gloves were worn, but an apron over parts of street clothing. I do not recall the presence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DR. C. W. HIGGINS,
Microscopic and Analytic Physician,

Fig. 4. Breezy quack medical ad from the Salt Lake City Illustrated Directory of 1887. It says "Syphilis, Gonorrhea, Gleet, Stricture, and all old lingering diseases which vitiate the blood and impair the system, thoroughly and permanently cured. Will forfeit Five Hundred Dollars for any case taken under his treatment which he fails to cure."

of a microscope and bacterial stains or tissue examinations were not in use. I also served as apothecary. I think I gave chloroform, the preferred anesthetic, about 50 times during the service without mortality, although I was frequently frightened by the patient's condition."

Dr. Hamilton was succeeded as medical director of St. Mark's Hospital by Dr. Frank S. Bascom, whose tenure lasted from 1894 until his death in 1932. He was a vigorous character and an excellent clinician. His executive ability brought high standards to the hospital, attracting a superior staff. He instigated the founding of the nursing school at St. Mark's in 1894, the first hospital nursing school in the Intermountain West. He helped found the Utah State Medical Society and was its first president. Other prominent early-day surgeons at St. Mark's were John F. Critchlow, Union Worthington, Augustus C. Behle, and T. B. Beatty. Dr. Beatty gradually withdrew from private practice and did a tremendously valuable service to Utah in organizing and administering for many years the State Board of Health.

Holy Cross Hospital was opened in an abandoned barn on 5th East in 1875, "at the earnest request of the miners and smelter workers in the Intermountain territory." Sisters M. Holy Cross and Bartholomew were sent to undertake the work. In 1882 they purchased the present 10-acre hospital site, then distant from the city. By 1890, the number of sisters had increased to 15 and the average daily census of patients was 50. In 1901, a training school for nurses was inaugurated.

The first surgeon at Holy Cross Hospital was Dr. Joseph M. Benedict, who received his surgical training on the battlefields of the Civil War. Dr. Benedict was, in fact, the only surgeon permitted to operate at Holy Cross from 1875 to 1886. He was easily the dean of Utah surgeons during this period, a bold man who undertook such formidable procedures as amputations at the hip-joint and shoulder-girdle, radical breast operations, and abdominal section. He was never really converted to the new doctrines of Joseph Lister, however, and this fact led to a request for his resignation in 1886. Some of the most prominent surgeons at Holy Cross Hospital after the turn of the century were Dr. Harry N. Niles, Dr. A. J. Hosmer and Dr. E. F. Root. The latter two are well remembered by some of us here. Their high repute was well deserved.

The L.D.S. Hospital came much later than St. Mark's and Holy Cross. Its construction was begun in July, 1903, and the building was ready for use early in 1905. Impetus for its construction was a bequest of about $80,000 worth of real estate by Dr. William H. Groves, a Mormon convert and an immigrant dentist from Nottingham, England. Dr. Groves died in 1895. Dr. Joseph S. Richards attended him in his final illness and dissuaded him from his aim to endow a library by pointing out the greater need for more hospitals. The Groves will stipulated that the institution should be known as the "Dr. Wm. H. Groves Latter-day Saints Hospital" and that Dr.

Joseph S. Richards should be "medical director of the same as long as he lives." The actual cost of the original building was several times the amount received from Dr. Groves' estate. The first patients were charged $1.50 per day for ward and $2.25 for semi-private accommodations.

When the L.D.S. Hospital was opened, most of Salt Lake's leading surgeons were on the staffs at St. Mark's and the Holy Cross Hospitals. A few of them transferred to the L.D.S. staff, including Dr. Joseph Richards and Dr. S. H. Pinkerton, a highly trained and very competent surgeon. Dr. Richards was soon joined by his son Ralph, and other newcomers quickly built up the staff to sizable proportions. Prominent early names on the surgical roster were Samuel C. Baldwin, pioneer orthopedist, the partners Allen and Middleton, and Joseph E. Tyree. They were abetted by several extremely able internists, including Gill Richards, who was Ralph's cousin, William R. Tyndale, and Eliot Snow's father, Clarence Snow. Dr. Snow pioneered blood transfusions at the hospital, using large paraffin-lined vessels known as Kimpton tubes.

As we all know, the contemporary history of all three of these historic voluntary hospitals is one of rapid growth in patient capacity and scientific equipment. May we also be capable of continuing the great tradition of steady progress in the art of surgery, set by our predecessors—the pioneer surgeons of Utah! •

Plastic and reconstructive surgery in a state prison*

Jose Garcia Velasco, MD, R. M. Woolf, MD, and T. R. Broadbent, MD, Salt Lake City

SOCIETY TRIES, judges, and commits many men and women to state prisons annually. In some instances the individual involved is forgotten by society at large for one to twenty years, depending on the term of punishment. None of these individuals is forgotten by the prison warden, the parole officers, commissioners, the prison doctor and his staff, or least of all, by the individual himself and by his or her family. Committed and uncommitted members of society frequently have emotional and physical problems, and often these problems are related. Those of us, at large in society, are at liberty to seek aid for our ills, but often the captive does not have this choice.

In 1959 we sought and gained the cooperation of our hospital, the Utah State Prison warden, commissioners and prison doctor and his staff in extending our plastic surgery training program to the prison. This was designed to be a service, when indicated, to the inmate at his or her request and simultaneously served to augment our Latter-day Saints Hospital based training program. The willing cooperation of all persons involved has made the program a success in all respects, and essentially without cost to persons or institutions.

During the years involved, 681 operations have been performed. Accurate records have been kept during the past five years (1961-1966), during which 487 operations were done under local anesthesia, of the following varieties:

Rhinoplasties	158
Scar Revision	94
Submucous Resection	55
Blepharoplasty	42
Rhytidectomy	36
Otoplasty	31
Miscellaneous	25
Hand Procedures	16
Frontal Rhytidectomy	13
Face Sanding	8
Chin Implants	5
Excision Tumor Skin	4
TOTAL	487

*Department of Plastic and Reconstructive Surgery, Latter-day Saints Hospital and Utah State Prison Hospital, Salt Lake City, Utah.

In numerous instances the inmate attributed some, and often much, of his trouble to his physical deformity; and consequently many of the procedures done were of an elective, cosmetic nature (Fig. 1-b). Postoperatively, favorable comments regarding the surgical correction and its effect on the person as a whole were made by the patients and the consulting psychologist. Real or not, all concerned, including the doctor and patient, were of the opinion that the project was valuable.

In an effort to evaluate the effectiveness of this program, we attempted a comparative study to determine whether there might be a lower repeater or return rate to the prison in operated paroled inmates as compared to randomly selected unoperated paroled inmates. Follow-up study is difficult on these patients

Fig. 1. Face Lift: (A) pre-operative; (B) post-operative. Rhinoplasty for Hump Nose: (C) pre-operative; (D) postoperative.

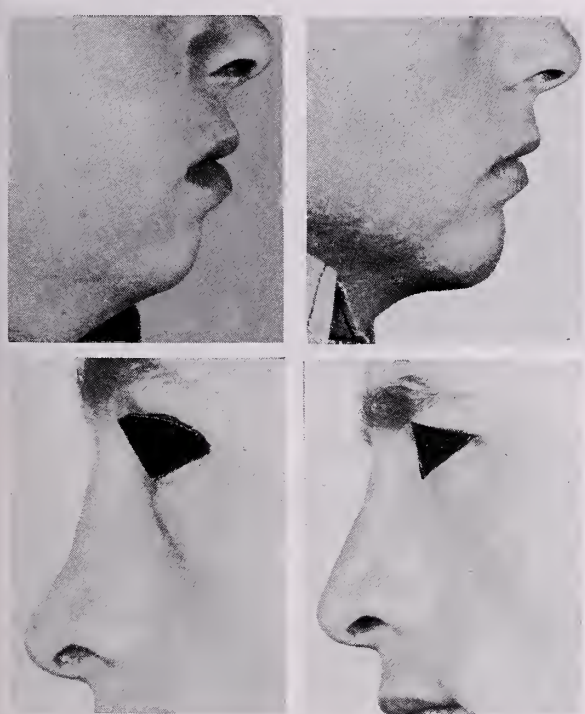
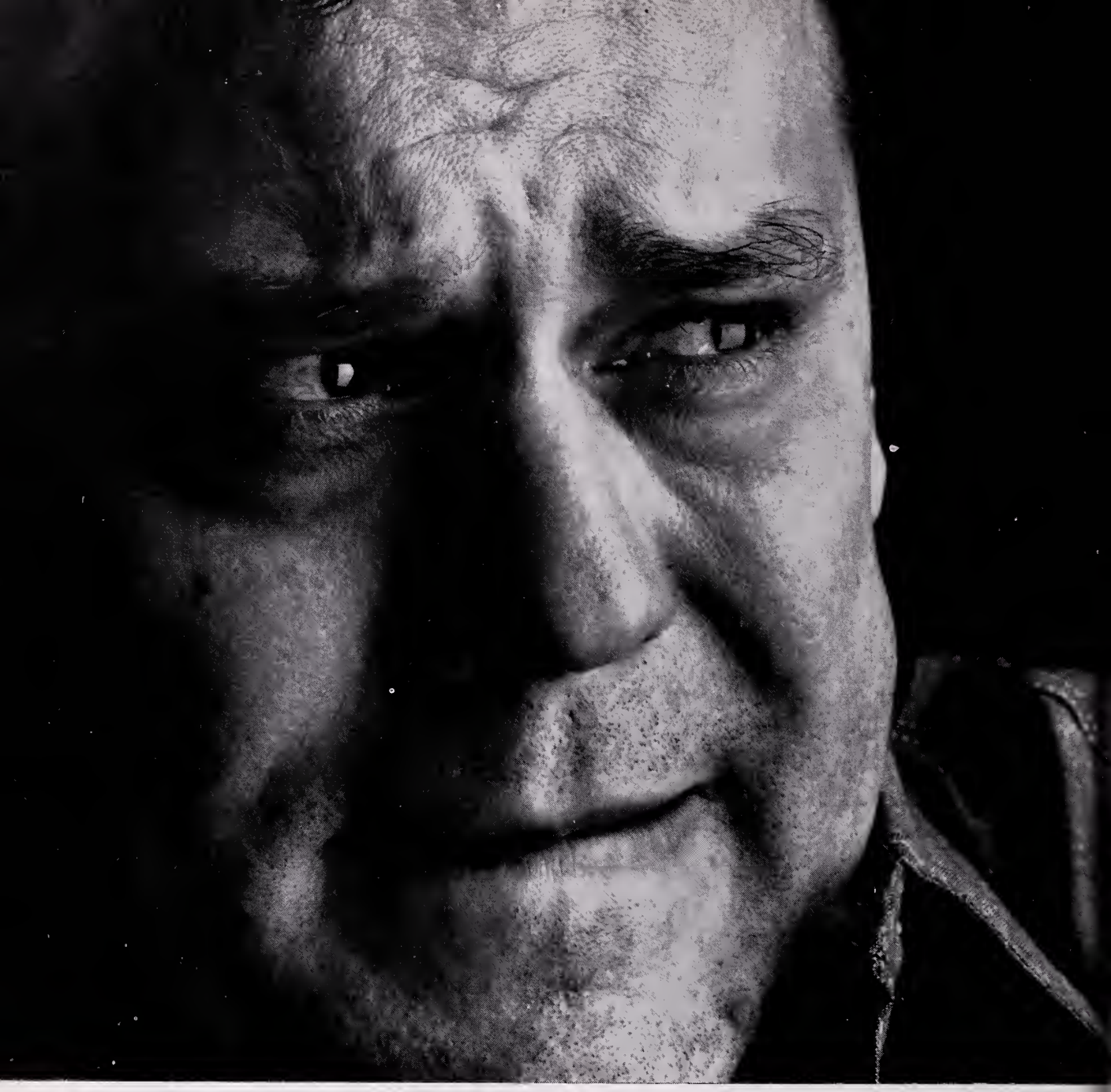


Fig. 2. Micrognathia, synthetic chin implant: (A) pre-operative; (B) postoperative. Rhinoplasty for Saddle Nose: (C) pre-operative; (D) postoperative, onlay heterogenous graft.

Fig. 3. Lop Ears: (A) pre-operative; (B) post-operative. Rhinoplasty and Submucous Resection: (C) pre-operative; (D) postoperative.



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after they leave the prison. In the paroled it is reasonably fruitful, however, for it is their duty to report regularly to their parole officer. If a decrease in return rate could be shown, it would be of great significance socially as well as economically.

Of 150 randomly selected inmates, paroled from October, 1964 to September, 1965, 45 (30 per cent) have been recommitted to the prison. Of 127 inmates on whom plastic surgery was performed and who were paroled during the past five years, 27 (21.3 per cent) have been recommitted. These figures immediately look impressive both in decreased repeater numbers and in the longer span of time since parole. We know, however, of many variables in this survey, such as the possibility of admission to a different prison, varying circumstances of stress, basic psychometric types, etc., in addition to which accurate follow-up is not always possible. One cannot, therefore, claim a direct relationship between corrective surgery and the ability of the inmate to "make good" after parole. Neither can one show a direct corollary between physical deformity and basic motivation in crime. The response of the inmate-patient, coupled generally with an improved attitude, indicates nonetheless the significant service the program is rendering to this segment of society.

Currently we are studying, along with the psychologist and psychiatric staff, the psychometric and personality make-up of a group of these patients. We hope to substantiate more objectively our current impression, that surgical assistance to the prison inmate, coupled with showing an interest in his or her welfare, is worthwhile to society as well as to the individual.

We wish to express our gratitude for the cooperation given by Warden John W. Turner, prison physician William C. Knott, M.D., Mr. Tage S. Sponbeck, and others of the hospital staff. •

Scoliosis——

Clues to early recognition

W. E. Hess, MD, Salt Lake City*

Many cases of scoliosis are overlooked early—when treatment would be most rewarding—because observers are unaware of its presence and frequency. These simple observations and tests should be routine.

ANY PHYSICIAN can diagnose advanced scoliosis and make a referral to an orthopedist for definitive care. However, treatment in advanced cases is never entirely satisfactory because complete correction cannot be obtained. The patient, therefore, goes through life with a deformity that could have been prevented had it been recognized earlier.

The reason for this brief and simple paper is to point out and emphasize methods for early recognition of scoliosis so that the general practitioner or pediatrician who has the advantage of seeing these children for other problems can more readily make the early diagnosis. We cannot rely on the family to make early recognition because they live too close to the child and early changes in posture of the spine develop so subtly and insidiously that they are usually missed. My experience is that scoliosis is first recognized by a school nurse or a physical education teacher who sees the child for the first time undressed and sends a note home to the family indicating there may be something wrong with the spine. Occasionally the dressmaker notices the deformity and also occasionally the family doctor notices it during

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a preschool examination. Seldom does the orthopedic surgeon see the child until there is an easily recognized and usually fixed deformity and the child is in the nine to sixteen year age group.

Early recognition possible

It is possible to recognize scoliosis in its very early stages long before it is fixed and difficult to treat, if one is aware of certain early diagnostic signs. It is like diagnosing any disease—one must be aware that it exists.

Fig. 1. Photograph from front showing early deformation.

It is important to examine the child undressed and to look at the child standing both from the front and from the back (Figs. 1 and 2). Often one can detect asymmetry better from the front than from the back. Have the child stand evenly on both feet and look at the level of the shoulders. Any drooping of either shoulder is presumptive evidence of scoliosis. Sprengel's deformity, Klippel-Feil syndrome, and torticollis may temporarily confuse, but are easily distinguished from scoliosis. In adults, most predominantly right or left-handed people have a slightly lower shoulder on the side of the most used extremity. This doesn't hold for children.

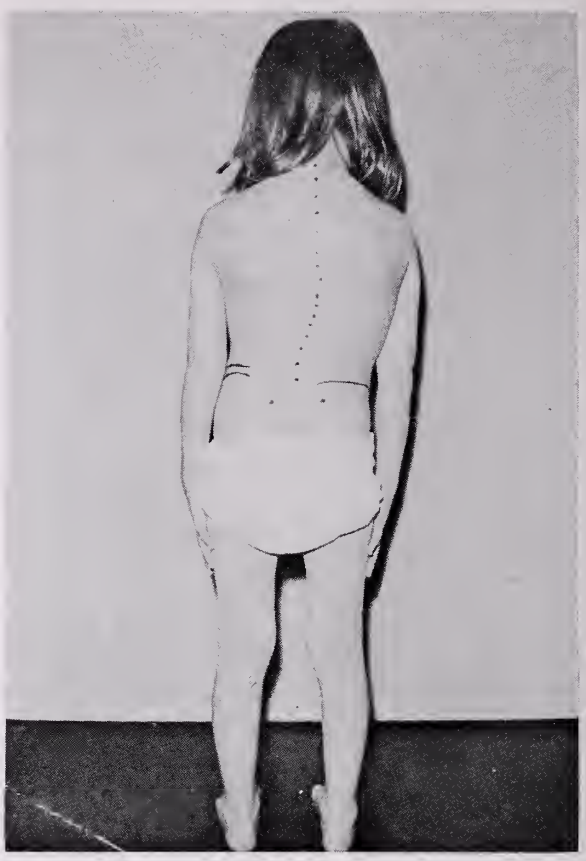

Fig. 2. Photo from rear showing early deformation.

The next place to observe closely is the flank area. One side sinks in more than the other in the presence of scoliosis. Also one iliac crest may appear higher (Fig. 3). Next, run the index and long fingers down the spine from top to bottom, straddling the easily palpable spinous processes. If this is done with moderate pressure two or three times, enough erythema will be produced from the pressure to give one a graphic outline of the spine.

Next, one looks for prominence of the rib cage to the convex side of the dorsal curve. This can be accentuated by having the child bend forward and touch the floor with the fingertips without bending the knees (Figs. 4 and 5). The hump on the convex side then becomes more apparent. This is due to the fact that the vertebral bodies involved in the

curve always rotate so that the spinous processes point to the site of the concavity. The ribs on the concave side, therefore, rotate forward giving a dished-in appearance and the ribs on the convex side of the curvature rotate posteriorly, causing a prominence or hump more easily seen when the child bends

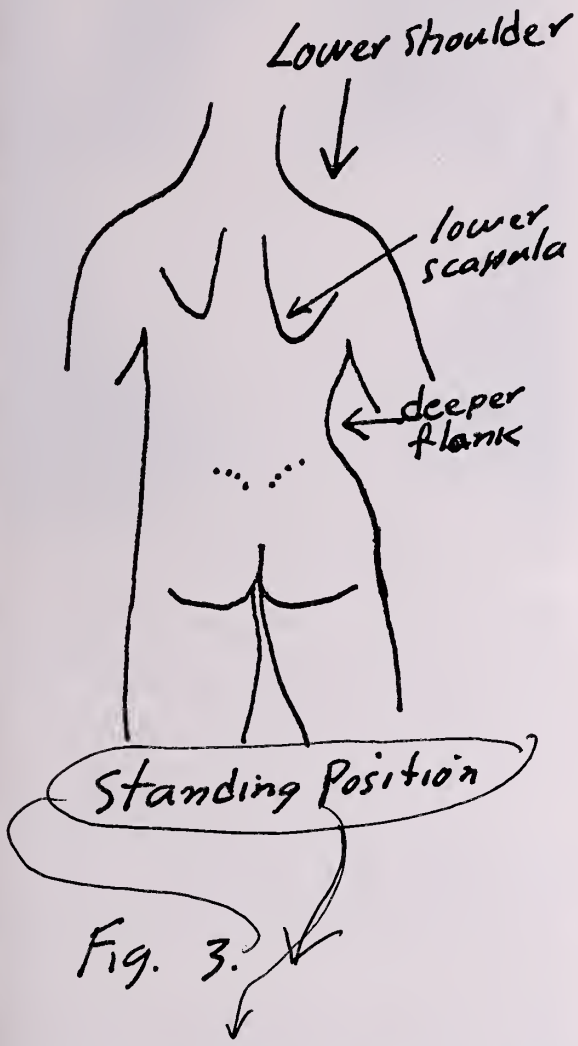

Fig. 3.

forward. If this hump is present, it usually means that there is a certain amount of fixed rotation and therefore a fixed deformity.

Have the child bend to the right and to the left. The range is better when bending with the concavity of the curve.

Where there is any suggestion of asymmetry, or one is in doubt, always x-ray the spine (Figs. 6 and 7). It is a well-known fact that where there is clinically visible asymmetry of the spine, the x-ray always looks worse. The spine should be x-rayed with the

Fig. 4.

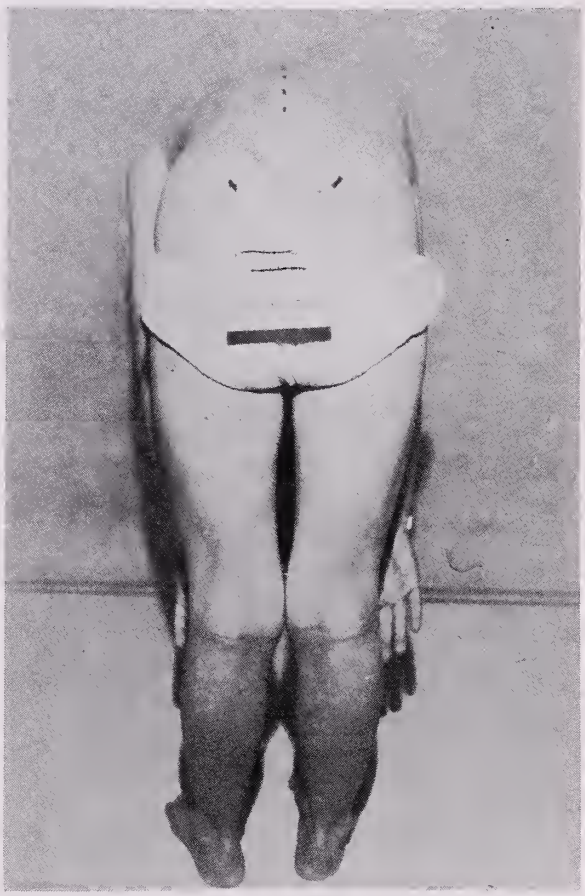

Fig. 5. Forward bend showing hump on right due to rotation.

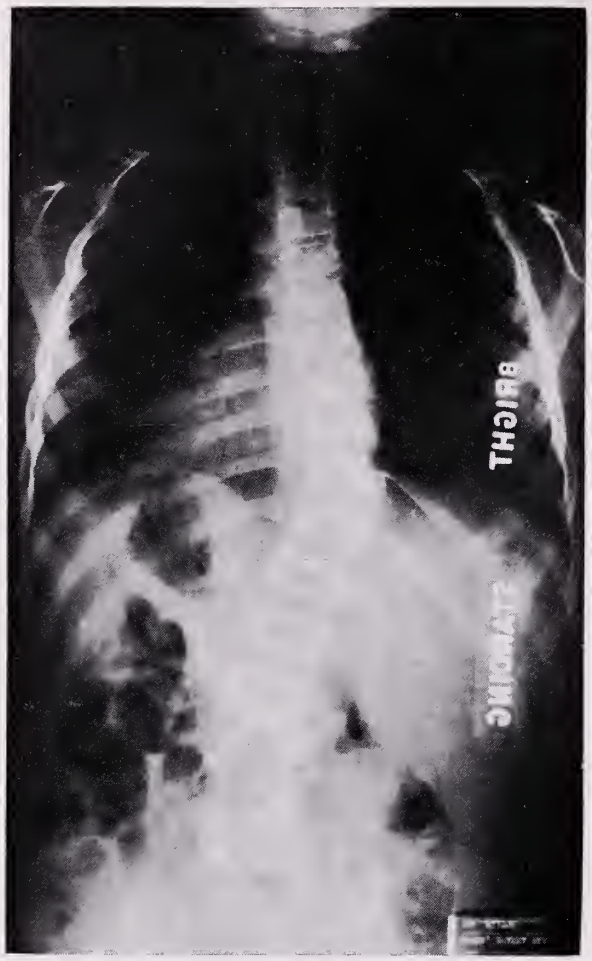

Fig. 6. Standing roentenogram in 7-year-old girl when first seen (idiopathic curve).

patient lying down and with the patient standing evenly on both feet. This roentgenologically verifies any shortening of one lower extremity that may have been detected with the tape measure. Also, it will be noted that the effect of gravity (the patient in the standing position) increases the curves about 10 degrees.

Summary

The important things in the early recognition of scoliosis are these:

1. Think scoliosis. Be aware that it does exist and can be diagnosed even as early as age two. (Scoliosis may even be present in the newborn, but is not usually of significance until the patient is ambulatory.)

Fig. 7. Standing roentgenogram in 7-year-old girl with anterior poliomyelitis (paralytic curve).

2. Look for a depressed shoulder.

3. Watch for deepening of one flank.

4. Have the child bend forward and see if a unilateral hump is present.

5. Take a standing x-ray of the spine when in doubt.

The earlier the diagnosis of scoliosis is made, and the child referred to the orthopedic surgeon, the easier and less prolonged and less expensive the treatment and the better the final result. By making the early diagnosis and getting the patient under proper treatment, one can save the patient a lifetime of disability. •

Venous and lymphatic stasis of the lower extremity--

Treatment of chronic changes by a modified Linton procedure

Philip M. Howard, MD, Alvin E. Harris, MD, and Richard R. Price, MD, Salt Lake City*

THE UNDERLYING PATHOPHYSIOLOGIC PROCESSES that occur in the lower extremity associated with long-standing venous disease are little understood. The changes associated with chronic venous insufficiency, namely pigmentation, atrophy of the skin and subcutaneous tissues with loss of hair and ulceration are seen frequently, but there is scant mention in the surgical literature of such findings as fat necrosis with scarring, secondary calcification, and ectopic bone formation. These pathologic conditions are found in the post-thrombophlebitic syndrome with secondary varicose veins, as well as in extremities with primary varicose veins of long standing.

In reviewing the literature, little explanation has been offered to account for the pathologic changes in the skin and subcutaneous tissues in extremities suffering from the effects of chronic venous insufficiency other than to explain the damage due to abnormalities in venous blood flow.

Ward[1] in 1960 and Beninson and Morales[2] in 1964 showed that calcification and ectopic bone formation in the subcutaneous tissues, often not even adjacent to the ulceration, might act as a foreign body perpetuating the ulceration, or might actually be the eventual cause of the ulceration. They cite case reports in which the chronic leg ulcers did not heal until the calcium deposits were removed. Subcutaneous ossification of the lower extremity is not an uncommon condition. It is always associated with chronic venous insufficiency and is found on the medial aspect of the lower extremity by x-ray studies (Lippmann & Goldin).[3] These authors also stress the fact that the heterotopic bone in chronic venous insufficiency is apparently formed by a local process, and represents metaplasia of one of the cellular elements of the subcutaneous tissue into viable bone. Ossification occurring as a result of fat necrosis with calcification has not been found in their observations.

Lymphedema associated with lymphatic strangulation has been stressed by Gray.[4] He states that remodeling of anastomotic channels is adversely affected by even small amounts of scar tissue. This again has been emphasized by Crockett[5] in England with his studies of lymphatic anatomy and lymphedema. By lymphangiographic studies he has shown that lymphatic rerouting through the deep system can occur where there is obstruction to superficial lymphatic drainage and no scar barrier between the systems. This undoubtedly explains the chronic lymphedema associated with post-thrombophlebitic processes and varicose veins of long standing, where the lymphatic rerouting is prevented by strangulating scar and fibrosis as a result of chronic venous insufficiency. We have attempted to reverse the pathophysiologic processes that develop in the lower extremities which are secondary to venous and lymphatic stasis.

Utilizing Linton's[6] principles, we attempt the following:

1. To remove all varicose veins in the involved extremity—namely, the long and short saphenous systems and their tributaries.

2. To sever the communications between the deep and superficial venous systems by ligating and dividing the communicating veins on the medial and posterior aspect of the lower leg.

3. To restore the lymphatic drainage of the skin and subcutaneous tissues of the lower extremity into the muscle lymphatics

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Fig. 1. Lower extremity showing large varicose veins wtih changes secondary to chronic venous insufficiency; namely, pigmentation with atrophy of the skin and subcutaneous tissues, loss of hair, and a pre-ulcerous potentiality.

Fig. 2. A longitudinal incision has been made from below the condyle to behind the medial malleolus and the skin flaps dissected free from the underlying diseased tissue, namely, varicose veins with large communicating veins, thickened and scarred deep fascia overlying the calf muscles of the medial and posterior aspects of the leg.

Fig. 3. At the completion of the procedure all communicating veins have been ligated; all of the scarred deep fascia has been removed, exposing the muscles of the medial and posterior aspect of the leg. A saphenofemoral vein ligation has been performed and the long saphenous vein stripped from the groin.

by resecting the barrier of indurated and thickened subcutaneous tissues and scarred deep fascia of the lower leg except in the area of the anterior compartment. It is essential that all ulceration and dermatitis be healed and epithelialized. Excision and grafting may be necessary before the definitive surgery.

Procedure

A longitudinal incision is made from behind the medial malleolus to the area below the medial condyle of the tibia through the skin and deep fascia of the medial aspect of the involved extremity. All diseased subcutaneous tissue and varicose veins are dissected from the skin flap and removed with deep fascia overlying the posterior muscles of the calf. The deep fascia is removed except the portion overlying the extensor compartment of the lower extremity. All communicating veins are ligated and divided. The

Fig. 4. View taken seven months following the radical procedure, showing restoration of the normal physiology; namely, growing of hair, decrease in pigmentation, thickening of the skin, and supple tissues without residual swelling or induration.

small saphenous vein is removed with preservation of the sural nerve. Routine saphenofemoral ligation and stripping is performed from the groin to the knee and any secondary vein dissection is performed at this time.

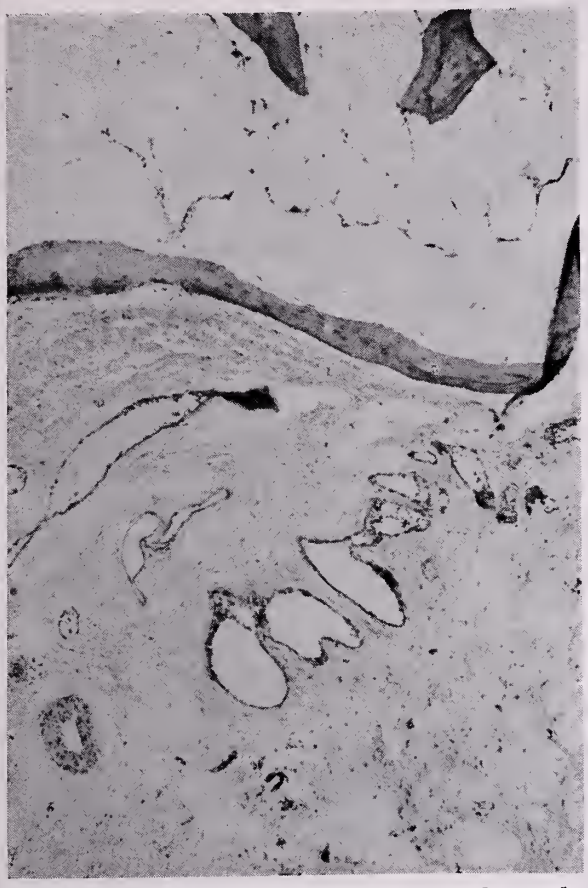

Fig. 5. Low power microscopic section shows the abrupt junction of vascular fibrofatty tissue and a mature trabecula of well-formed osseous tissue provided with its own fatty bone marrow. In most areas the bone was surrounded by hyalinized or partially calcified fibrous tissue. Magnification X:100. Bone was distributed extensively throughout the gross tissue.

Tevdek tension sutures tied over Telfa or cotton pads make an excellent method for relieving skin flap tension with resulting necrosis. A small Penrose drain can be used for 24 hours. The skin and subcutaneous tissues are closed loosely with interrupted 4-0 black silk. A large gauze compression dressing is held with a 4″ Ace bandage and the extremity elevated for four to five days. Early ambulation is initiated.

Summary and conclusions

Chronic skin and subcutaneous tissue changes have been described which are secondary to chronic venous insufficiency and chronic lymphatic stasis. The presence of calcifications, thickened scar and ectopic bone formation is described. This predisposes to chronicity and prevents restoration of normal physiology, healing of ulcerations, etc. The thick scar produced by the fat necrosis with secondary skin and subcutaneous atrophy undoubtedly produces a strangulation effect on the superficial lymphatics which prevents anastomosis with the deep muscle channels. The procedure described attempts to reverse and bring about improvement of the chronic venous and lymphatic changes that are found in post-thrombophlebitic sequelae and primary varicose veins of long standing. The use of Tevdek tension sutures on the skin flaps helps to prevent necrosis. •

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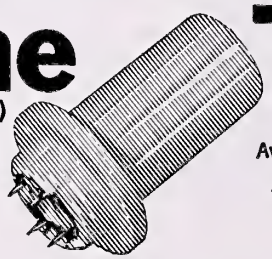

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Regional medical programs

Implications for the intermountain area

C. Hilmon Castle, MD, Salt Lake City*

Public Law 89-239 is an accomplished fact. It has potential for a great effect on health care. What happens depends upon the quality and interest of people who develop regional programs. The author presents a practical and workable concept of requirements to make it succeed.

CURRENTLY there is great uneasiness among those concerned with medical education and medical practice because of unrelenting external forces which are insisting on rapid changes. To some extent the medical profession has generated these forces through outstanding success in developing new knowledge and capabilities. This unparalleled progress has given the public a glimpse of what is possible and now expectations are increasing more rapidly than the medical profession has been able to translate all new advances into practice. In spite of the high cost of recent progress in medicine, the public is reminded by our political leaders that we can afford even more. In order for the medical profession to maintain leadership in achieving better health for the people, it is essential to recognize that increasing medical knowledge, increasing expectations by the public, and increasing cost of medical care will result in certain inevitable changes—for example, increased specialization and increased institutionalization and regionalization of health care. These changes must be anticipated, and ways to accomplish them for the greatest benefit to the people should be provided by the medical profession.

Certain aspects of medical care are better delivered in the patient's local community. Other more technical aspects which require highly skilled teams of personnel and expensive facilities are more effective when centralized. The advantages of each can no longer be ignored and a new instrument for realizing the maximum benefit from each approach is now at hand through Public Law 89-239 which deals with Regional Medical Programs for Heart Disease, Cancer, Stroke and Related Diseases. The debate as to whether it is desirable for the Federal Government to provide this instrument has not ended; however, Public Law 89-239 is an accomplished fact. There is no longer a question as to whether people will be affected by it, but rather *how* they will be affected by it. Whether benefits come to the practitioner and his patients now or much later, as a result of this new bill, depends on a number of variables, the most important of which are the people involved in developing regional medical programs. It would be unfortunate indeed if academic institutions, county and state medical societies, departments of public health, medical centers, hospitals, and practitioners of medical care fail to meet the challenge and opportunity provided by this bill to improve the health of all the people in this country.

Public Law 89-239 enacted on October 6, 1965, supports the development of cooperative arrangements among health professions, institutions and agencies for the purpose of improving medical care for patients with heart disease, cancer, stroke and related diseases, and may mark the beginning of a new era in medicine. The medical community now has an instrument for realizing the highest quality of medical care for people in every section of this country. This is to be done by development of regional cooperative arrangements among existing personnel and facilities within a coherent geographical region through local leadership and initiative. Many feel that practical and productive

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mechanisms for decision making at a regional level for improving existing resources and developing new ones to serve the needs of all the people have long been needed. Development of such mechanisms are not only encouraged by this bill, their achievement is essential for any true benefit to come from the bill.

Fortunately, the Heart Disease, Cancer and Stroke Bill of 1965 was quite different from the proposals made by the President's Commission in December, 1964. Only three out of 35 original recommendations were used as the basis for formulation of Public Law 89-239. Even these three recommendations were drastically altered. The original emphasis on a highly mechanistic approach involving the construction of centers with satellite diagnostic and treatment stations was changed to one in which existing facilities and personnel are provided support to determine their needs and to implement methods which they determine are appropriate for their own geographical region. The original recommendations of the Commission asked for broad, sweeping, and specific changes in our present systems of health care which provoked grave concern and apprehension in both the practicing and academic communities. The bill, as finally passed, was greatly simplified and its purpose can be summarized as follows: Through grants, to encourage and assist in the establishment of regional cooperative arrangements which will enable the medical profession to bring to patients the latest advances in the diagnosis and treatment of heart disease, cancer, stroke and related diseases. It is important to understand that Public Law 89-239 does not provide a blueprint for a specific program, but rather reflects a concept of improving health care through cooperative arrangements among existing organizations, agencies, and institutions within individual regions to identify the needs of the people and better ways to meet them. It is an instrument for fusion of the many resources of a particular region with the hope of leading to synthesis of imaginative, effective and feasible programs. Also, it is important to understand that the National Institutes of Health, which administers the Regional Medical Program, does not intend that the total support of a regional program for heart disease, cancer and stroke be solely through this bill. Because of this, there is an additional responsibility for those developing programs to find ways to make use of all available resources, both within and outside the region, as part of their effort.

More flexible bill

Even though this is a more limited bill, it is a far more flexible one than originally proposed. The changes occurred primarily as a result of efforts made by the organized health professions. Many dedicated, sincere, and thoughtful people saw clearly the potential disadvantages of the original recommendations of the President's Commission and were effective in changing the proposal sufficiently to create not only an acceptable but a workable bill. The type of leadership exhibited by those who effected the changes in the bill during the legislative process is the kind of leadership needed in medicine today. What happens from this point on will depend on the type, the quality and the interest of people who will be involved in development of regional programs, both at the national and local levels.

As finally passed, the Regional Medical Program proposes a continuous interaction among university medical centers, community hospitals, practicing physicians and allied health personnel, health agencies and other institutions in training, continuing education, clinical research and patient care. It is this sort of interaction that has helped to make medical schools and their teaching hospitals the "centers of excellence" in the nation's health network. Its extension throughout the resources of a region cannot but benefit each institution, organization, agency, practitioner, and allied health personnel as well as their patients.

The Heart Disease, Cancer and Stroke Bill is in essence an experiment in which new and improved methods for wider distribution of health care in the major disease categories will be explored. The results will undoubtedly have an impact on future developments in medical care in a region. This is a rational approach to a national problem about which so many people with different viewpoints are

concerned. Although the Regional Medical Program emphasizes application of knowledge, there is no intent to de-emphasize research. The high purposes of this legislation can be considered only because of the great success in the national research effort, and accomplished only if advances in new knowledge and technology continue at a more accelerated rate.

The mandate in the Heart Disease, Cancer and Stroke Bill is quite clear. In order to receive support for a program, various elements within a region must find ways to work together as a unit. This requirement for cooperation is likely to have an enormously salutary effect on bringing together institutions, agencies, and organizations to collaborate in finding ways to achieve the potential benefits of the Regional Medical Program. As a result of the bill, dialogues have developed among medical groups which have never before talked together regarding mutual problems. This accomplishment alone has caused some to declare significant progress already in the program. In view of the well established nature of the national and local organizations, institutions and agencies involved in developing Regional Programs and the funds which may be provided, it is not at all surprising that this type of progress has occurred. Whether effective programs emerge and real benefits accrue to the people commensurate with the cost will require much more time to evaluate.

Planning grants awarded

For the present, there are reasons to maintain the high level of optimism and accentuate the positive. As of November 1, 1966, 17 planning grants had been awarded. They include Hawaii; Washington-Alaska; New Mexico; Western Interstate Commission on Higher Education (WICHE); Utah with portions of Nevada, Idaho, Montana, Wyoming and Colorado; California; Kansas; Vermont; Connecticut; Missouri; North Carolina; Texas; Wisconsin; Oklahoma; Tennessee; Albany, New York, including the northeastern portions of the state; and Rochester, New York, and 11 surrounding counties. WICHE will collaborate with other planning groups in the West to evaluate the needs and resources for the states of Nevada, Idaho, Montana and Wyoming. Of the approximately 40 additional planning applications under consideration, four or five are likely to be awarded by the end of 1966 and the majority eventually, so that practically all portions of the country will be covered by planning grant applications. In the West, in addition to the states above which have already received support for planning, Colorado and Oregon are likely to receive planning grants within a few months. It is not expected that all groups will actually develop operational programs; however, many will. The western part of the country appears fortunate indeed to have not only capabilities for meeting the requirements of Public Law 89-239 early, but also the willingness to concentrate a maximum effort toward implementing the concepts embodied in this legislation in the part of the country with the greatest need for regionalization.

Because the great need for continuing education in the Intermountain Area has long been recognized and many efforts to meet this need already existed, it was possible for the Intermountain Regional Medical Program (IRMP) which includes Utah and portions of Nevada, Idaho, Montana, Wyoming, and Colorado, to submit well-conceived and feasible plans for pilot projects to the National Institutes of Health on October 1, 1966. Most of these projects have had several years of planning with a more concentrated effort over the past year. Missouri and Albany, New York, also submitted applications for pilot projects on this date. The advantages of embarking on pilot projects at this stage of development of regional medical programs are considerable. Early exploration of many of the unknowns in this new endeavor as well as a better definition of its purposes will help in accelerating other regional programs. The pilot projects submitted by the IRMP represent only a small portion of what is eventually planned for the Intermountain Area, and deals primarily with providing information and developing new skills for practicing physicians and nurses. Considerably more planning is necessary before additional pilot projects for shaping a total program dealing with the regional needs in heart disease, cancer and stroke can be outlined.

Insufficient manpower

As in other regions, one of the greatest problems in the Intermountain Region is insufficient manpower, especially in remote communities. Not only is the physician-patient ratio the lowest in the country, there are even greater deficiencies among allied health personnel such as nurses, technicians, assistants, etc. Collaboration among the universities, hospitals, and the medical school is essential in expanding existing training programs and in establishing new ones for increasing the quantity and quality of personnel. Cooperative arrangements among existing institutions should facilitate the creation of new schools in both medicine and nursing. Better utilization of highly trained personnel such as physicians and nurses may have a significant impact on improving the manpower shortage. It is possible that special medical assistants trained only for a short period may be able to perform many routine tasks which currently take a substantial part of physicians' and nurses' time. Even if highly skilled personnel make more efficient use of their time by use of special assistants, a greater number of physicians and nurses will still be needed if all the people are to receive high quality medical care.

With proper supervision and assistance, many community hospitals could provide learning experiences comparable, and in some aspects better than university hospitals. It does not appear desirable at this time to develop training programs in community hospitals without a close affiliation with university training programs and a full-time faculty in the community hospitals with academic rank. Visiting consultants and teachers from university medical centers will benefit both the university and the community in providing a perspective of local needs and ways to meet them. Establishing an academic type learning environment in community hospitals will have an overall salutary impact on attracting more young people in these communities into the health fields as well as maintaining the physician's own enthusiasm for high-quality practice. Although the relationship to heart disease, cancer and stroke may appear indirect, only by resolution of some of the general problems dealing with training of more medical personnel and better distribution of them, will significant improvement occur in the major diseases.

Community hospitals can be linked to the university medical center by special communication devices such as two-way radio, teletype, and possibly even closed-circuit television. The latter is relatively expensive at present, but further developments in microwave systems in the Intermountain Area are likely to make this not only feasible but economical. Teaching with television can be done now through use of inexpensive, portable playback facilities in each hospital and systems for production and distribution of television tapes. Library facilities in each hospital in the region can be improved through services provided by the regional program. Essential to effective use of communication devices and other teaching aids is the presence of a teaching faculty in local community hospitals with paid responsibility for teaching.

Plans to teach skills

Plans are outlined in the application for pilot projects submitted by the IRMP on October 1, 1966, to teach specific information and skills to physicians, nurses, and assistants in cardiopulmonary resuscitation and acute cardiac care. Also, there are plans to attract practitioners to become teachers and developers of educational programs in heart disease, cancer, stroke and related diseases in the context of the practice of medicine. Knowledge and experience gained from these initial pilot projects will be helpful in developing other educational programs which will maintain the continuous interest and involvement of the learner. The value of self-testing devices in motivating the learner is well recognized because they provide opportunities for individuals to identify their own educational needs and appropriate ways to continue learning. Development of self-testing methods in heart disease which are likely to serve as models for other diseases is already underway.

A computerized tumor registry with a system for patient follow-up and physician education is included as an important project. Computer analysis and automated reporting of all aspects of patients with cancer will be a useful tool in allowing each practitioner to

evaluate the quality of care his patients receive and providing direction for the development of educational programs and diagnostic and treatment facilities in cancer. Systematic data collection and reporting through a regional tumor registry may serve as a model for other major diseases in understanding patterns of diseases within the region and how local environment factors influence them. Collection of data in remote communities may serve to stimulate meaningful clinical research on the type of diseases and patient material which confront the practicing physician rather than just on highly selected patients admitted to large medical centers. Clinical research in community medicine is likely to catalyze learning in the local community and contribute to development of new centers of excellence in at least some of the large communities within the region.

Expensive equipment can become an economy if shared. Sharing of centralized computer facilities is feasible at relatively little expense and can provide remote areas with capabilities for information storage, analysis, retrieval, and reporting, equal to large centers. A pilot project has been submitted to test the value and feasibility of on-line collection, analysis and automatic reporting by computer from several community hospitals electrocardiograms, hemodynamic measurements during cardiac catheterization, hemodynamic alterations in patients receiving acute cardiac care following myocardial infarction, cardiac surgery, etc., pulmonary function tests and other screening procedures useful in early detection of disease. If this project proves to be feasible and services provided are of sufficient value to be extended to other hospitals, this system can be expanded to include the entire region at relatively little cost.

The above represent a few projects we hope to implement in the Intermountain Regional Medical Program within the next few months. The full spectrum of activities cannot be outlined in this early stage because what can be done specifically under Public Law 89-239 has not been clearly defined yet. More information regarding regional health needs must be obtained and further interaction among the institutions, agencies, organizations and individuals within a region and the National Institutes of Health is necessary before specific programs in heart disease, cancer, stroke and related disease can come into focus.

The real implication of Public Law 89-239 to the Intermountain Area is that an instrument is now avaliable for improving the quality and quantity of health care in the major diseases for all the people in the region. The opportunity, challenge, and responsibility to see that patients benefit from this program are in the hands of the medical profession. The extent to which people in a region will benefit from development of a Regional Medical Program appears, at the moment, to depend on the type of leadership provided and the interest and willingness of health care personnel and institutions to develop cooperative arrangements appropriate to meet regional needs in heart disease, cancer, stroke, and related diseases. •

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Delayed intracranial pneumocyst*

Report of a case with arteriographic study

Ernest L. Cashion, MD, Salt Lake City

AIR WITHIN THE CEREBRAL SUBSTANCE (pneumoencephalon, pneumocyst, intracerebral pneumocephalus) constitutes part of the pathological complex known as cranial aerocele or pneumocele.[1, 4, 5, 6] The case to be described would be considered by most people as a pneumocyst or pneumoencephalon, but the general term intracranial pneumocele might be used. The pathogenesis of this condition is not clear. Why a cyst should develop late is not clear. Pendergrass, Schaeffer, and Hodes[7] emphasized that all fractures of the skull in the region of the mastoid and paranasal sinuses should have repeated x-ray examinations and their physicians should be aware of the development of pneumocephalus, days or weeks after injury. The case to be described may have occurred over a year later which is unusual, and adds emphasis to Jelsma's[5] suggestion that this condition is often unsuspected.

Taveras and Wood[10] stated there must be a hematoma and damaged brain tissue which becomes liquified leaving a porencephalic area which then can be filled with air entering from one of the accessory air sinuses or directly through a fracture in the skull or cribriform plate. The occurrence of cerebospinal fluid rhinorrhea is mentioned by several authors, particularly in the delayed type of aerocele or pneumocyst. Courville[1] described the air-cyst as related to the anatomic relationships and arrangement of the constituent white fiber bundles of the adjacent frontal lobe. He then described how air enters a contused area of the frontal lobe from the frontal sinus, ethmoid sinus, or the cribriform plate region and follows along fibers of the forceps major.

In the cases described in the literature, and in the present case, the cyst was approximately 0.5 cm. below the surface of the frontal cortex and would be above the radiating fibers of the corpus callosum.

The following case is reported to illustrate a pneumocele or pneumocyst of the frontal lobe in which arteriography was carried out. Elkin and Taylor[2] stated "the diagnosis is quite apparent on plain skull-films with no need for more complicated x-ray studies." The case illustrates the importance of delayed x-ray study in cases of fractures of the skull.

Fig. 1. A-P view on May 9, 1964 showing bullet fragments about the right orbit and one large fragment in the left parietal area.

*From the Veterans Administration Hospital, Salt Lake City.

Report of a Case

J. J., a 55-year-old, white male was seen on May 9, 1964. Several hours prior to admission he had received a gunshot wound of the head. The patient was shot in the right forehead in the area of the outer canthus of the right eye by a .22 calibre rifle. He was in acute distress when seen. He said only a few words. The wound of entrance was about 1 cm. posterior and 1 cm. superior to the outer canthus of the right eye, and the wound was approximately .5 cm. across. There was massive swelling about this area, and in place of the right eye there was a beefy red, edematous mass of tissue which included muscle and parts of the globe.

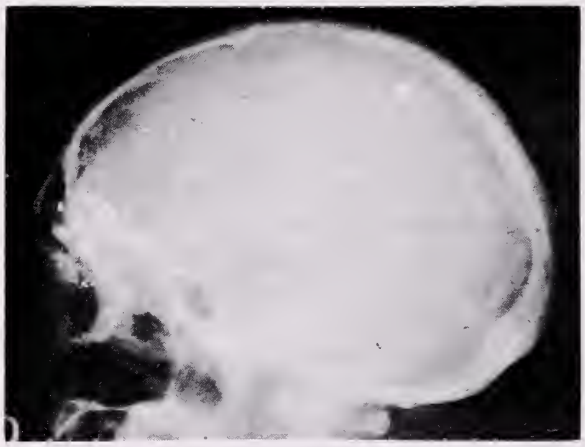

Fig. 2. Lateral view.

Fig. 3. A-P skull roentgenogram Apr. 27, 1965, showing pneumocyst of frontal lobe; notice close approximation of air to surface of brain.

Plain roentgenograms of the skull (Figs. 1 and 2) showed fractures about the right orbit and frontal sinus, and lead fragments in the left parietal area.

The wound of entrance was cleansed and excised under local anesthesia. It healed per primam, and he was discharged on May 18, 1964. He had a moderate right hemiparesis associated with expressive asphasia.

On January 6, 1965, he had moderate weakness in the right extremities, particularly the hand. He had difficulty in carrying out rapidly alternating movements in the right hand. His daughter stated that the patient had been even better and the reason she had asked him to return was that there had been some detrioration in his speech, and in movement of the right side. The patient was placed on Dilantin and physical therapy started. On January 25, 1965, he was much improved and on April 27, 1965, it was learned that about five days previously he had suddenly become worse, with weakness of the right extremities and speech becoming much less intelligible. On April 27, he was much weaker on the right than at any time in the past and his speech was hardly coherent.

Plain roentgenograms of the skull (Figs. 3 and 4) showed an air-containing structure in the left

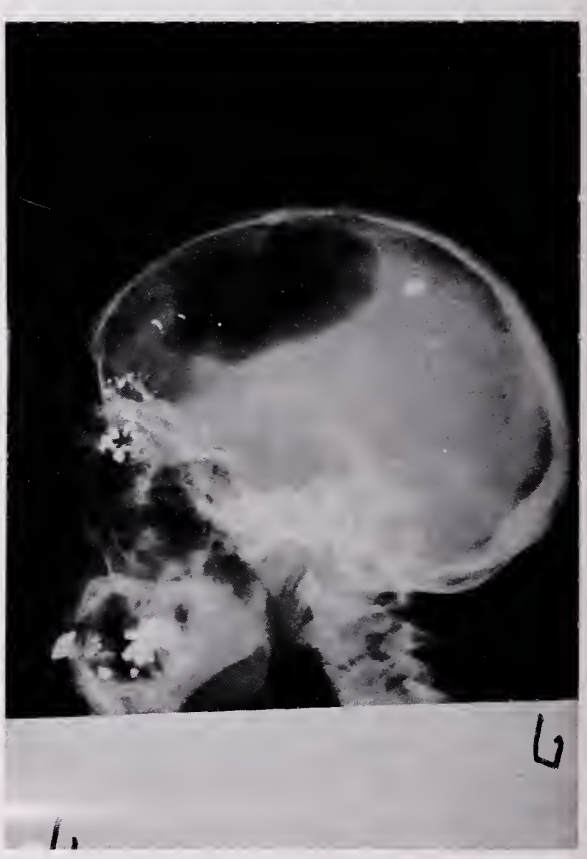

Fig. 4. Lateral view demonstrating no ventricular filling.

frontal lobe which measured 10 x 5 cm. This structure appeared to be within the substance of the brain itself. It did not move when the patient was placed in different positions and it did not communicate with the ventricular system. The superior wall of the air-structure was just below the inner table of the skull. No frontal sinus fractures could be visualized.

A left carotid arteriogram (Figs. 5 and 6) showed shift of the anterior cerebral vessels to the right side, associated with some bowing of the anterior cerebral artery. The radiographic changes were typically those of a frontal-lobe mass.

On the basis of the x-ray studies and neurological examination it was postulated that the patient had received a gunshot wound in the right frontal area, that the bullet had traversed the skull just above the frontal bone to the left orbital area, and then the large fragment seen in the left perietal area (Fig. 1) had ricocheted from the left frontal area into this region.

At surgery, the dura was densely adherent to the frontal pole, and when an attempt was made to separate the dura from the brain in the frontal area the effort was unsuccessful and led to profuse bleeding from the cortex. The cortex was discolored, swollen, and severely damaged. A defect in the posterior wall of the frontal sinus, about 0.5 cm. across and 3 cm. in length, was found but the dura was intact in this area. Mobilization of the dura into the cribriform plate area did not show a tear in the dura and no spinal fluid was seen coming through the dura. Specifically, no fistulous tract was seen coming up from the area of the ethmoids, cribriform plate, or frontal sinus into the frontal lobe. The left frontal sinus had been entered during the craniotomy and it was possible to place a curette through a midline septum to the right frontal sinus. Because of swelling and tightness of the brain, the pneumocyst was opened. This led to collapse of the brain and the cyst was centered. It measured approximately 10 x 5 cm., had a smooth lining, and no opening could be seen into it.

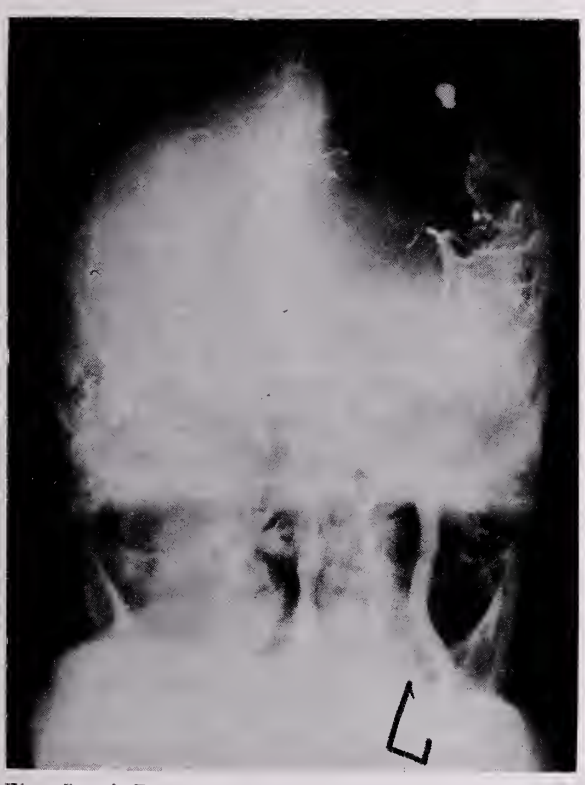

Fig. 5. A-P carotid arteriogram Apr. 28, 1965, showing shift of anterior cerebral vessels to right and relationship of the air cyst to the cerebral vessels.

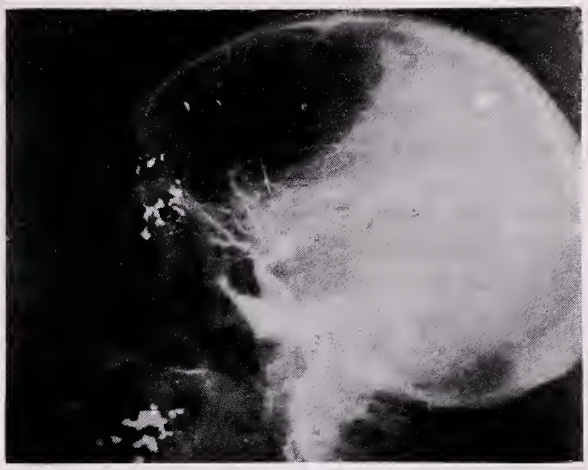

Fig. 6. Lateral carotid arteriogram.

Discussion

After surgery, there was improvement in the patient's hemiparesis and his speech. This improvement has continued and now the patient is as well, so far as movement and speech are concerned, as he has been at any time since the accident.

Exactly when the pneumocyst developed is not clear, but it is felt that it developed almost 12 months following the accident. Associated with it was cerebral edema, which did not subside over a period of days and was becoming worse. Rapid improvement following surgery was probably due to release of air under pressure which was contributing to cerebral edema. Another possibility is the air-cyst developed soon after the accident and an actual or potential communication with the extracranial space was present from the beginning. This communication may have assumed a ball-valve function and intermittently air accumulated under pressure in the cyst. This would lead to neurological dysfunction. The final episode was precipitated by great increase of pressure in the cyst. This communication was not seen at surgery.

Summary

A case has been presented of pneumocyst of the frontal lobe associated with cerebral edema or periodic enlargement of the pneumocyst, as established by arteriography and craniotomy. As nearly as can be determined, it is the only case of this type in the literature where arteriography has been done. It is believed that the pathogenesis consisted of severe brain injury associated with destruction of a portion of the frontal lobe. There was also a posterior wall frontal sinus fracture. One year after the accident, or intermittently over the year, air entered the area of brain destruction from the sinus and became localized. Cerebral edema developed later, or pressure in the cyst began to increase, and this led to neurologic deterioration which was reversed by surgery. •

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Esophageal atresia-tracheo-esophageal fistula*

Consecutive Survivals

Robert J. Beveridge, MD, Salt Lake City

EACH YEAR an estimated 175,000 infants are born in the United States with congenital deformities of importance. Four babies in every hundred have a serious birth malformation — from causes mostly unknown. Among the malformations seen in these infants is esophageal atresia. This defect is of extreme importance since it is incompatible with life unless it is recognized and treated shortly after birth. Its incidence is estimated to be 1 in 2000 to 1 in 2500 births. Although this malformation was first described in 1697 there was, until recently, little hope for survival among these unfortunate infants. Prior to 1939 all of them died. We are all well aware of the contribution made in 1941 by Dr. Cameron Haight when he accomplished the first successful one-stage repair.

Concomitant with the advances in thoracic and cardiovascular surgery during the past fifteen years, there has been a steadily increasing survival among the little patients with this malformation. Many factors are responsible for this increasing survival, including earlier recognition of the malformation; better preoperative and anesthetic technics; earlier, more rapid and less traumatic surgery; and, probably most important, meticulous attention to the postoperative phase of their care.

This presentation is to report a series of sixteen consecutive survivals in infants with this malformation and to discuss briefly several aspects of their care and treatment that we feel are necessary to obtain the best results.

A brief description of the malformation will be advantageous to our discussion. Atresia of the esophagus is the primary defect, with loss of continuity of the esophagus

*From the Latter-day Saints Hospital, Salt Lake City, Utah.

from pharynx to stomach. Usually the upper esophagus ends in a blind pouch. This pouch varies in length from high in the neck to low in the mediastinum, opposite the bifurcation of the trachea. The length of this pouch and its availability for anastomosis with the lower esophageal segment is very important in the repair of this defect. As is well known, four types or variations of the esophageal atresia-tracheo-esophageal fistula complex have been described. In the majority of cases, the upper esophageal segment ends in a blind pouch and the lower esophageal remnant communicates with the tracheo-bronchial system at or near the tracheal bifurcation. This type of anomaly will occur in approximately 90 per cent of the patients, the so-called Type II.

On occasion, the upper pouch will have a communication with the tracheo-bronchial system, but this is rare. The presence of a tracheo-esophageal fistula accompanying the esophageal atresia adds considerably to the concern of all responsible for the preoperative preparation and surgery. The infants who have tracheo-esophageal fistula not only aspirate secretions from the esophageal pouch into the respiratory tract, but also must contend with the gastric secretions that may enter the tracheo-bronchial tree by means of the direct communication through the fistula. This connection between the tracheo-bronchial tree and the stomach is also of great concern to the anesthesiologist who finds his anesthetic mixture entering and distending the stomach until vented by means of a gastrostomy.

Associated anomalies

Infants with this malformation have a high incidence of associated anomalies. In one series, 28 per cent of the infants had an associated anomaly. In another series it was 77 out of 233. Usually, the associated malformation is also of the gastrointestinal tract, with imperforate anus in its various forms being the most common. Anomalies of all the other systems have been seen and described.

Esophageal atresia apparently is more common in males and, also, it is often associated with prematurity. Twenty to 25 per cent of these infants have a birth-weight of 2500 grams or less.

The presentation of a small series such as this is usually of little value; however, in this instance, it does present a high percentage of survival in consecutive patients. These infants had a variety of congenital malformations associated with the esophageal atresia and numerous complications were encountered.

Statistics of interest

Some general information concerning the series will be of interest. The mothers ranged in age from 17 to 35 years, with eleven mothers being in their early twenties. All of the families in the series were Caucasian. In one instance, the child was the eighth child born and in another, the sixth child in the family. However, in 10 instances, the patient was the first or second child born in the family. The average hospital stay of the infants was 20 days. This included the total hospitalization of the premature infants that were kept in the hospital until they weighed 5 pounds or more and also included three infants with multiple, serious associated anomalies that prolonged the hospitalization. Forty per cent of the infants were premature, the smallest weighing 3 lbs. 3 oz. Four of the infants had associated anomalies of major nature, including three with imperforate anus. Two infants of these four had multiple major defects. This series is unusual in that, contrary to the general trend, females outnumbered males 9 to 7.

Early suspicion that an esophageal atresia may be present, followed by early diagnosis of the defect and recognition of associated anomalies, forms the foundation upon which our approach to the problem is based. In a high per cent of cases, the nurses in the nursery first suspected the lesion when they noted an increase in oral secretions, coughing and/or cyanosis, in the infants. Our nursery personnel have developed a high index of suspicion for this lesion. In this series, it should be noted that surgery was recommended and performed within the first 24 hours in all but two of the cases.

Once the defect is suspected an accurate diagnosis must be made. A soft plastic or rubber catheter is first passed through the nasopharynx into the upper esophagus in an attempt to enter the stomach. If it cannot be made to pass into the stomach it is then taped

into position and an anterior-posterior full length x-ray is taken. If the upper esophagus ends in a pouch the catheter will be seen curled in this pouch, thus establishing the diagnosis. At the same time other information is obtained. In those patients with a tracheo-esophageal fistula, air will be noted in the gastrointestinal tract. In the patients that do not have a tracheo-esophageal connection, no air is visible in the intestinal tract. These latter infants more often tend to be premature than those with a tracheo-esophageal fistula and their birth is accompanied by polyhydramnios in a rather high per cent of cases, estimated to be 60 per cent or more.

TABLE 1
CONGENITAL ESOPHAGEAL ATRESIA
16 CONSECUTIVE SURVIVALS

Average weight	5 lbs. 1 oz.
Average time—birth to surgery (hours)	11
Average age of mothers	23
Number of prematures	7
Males	7
Females	9
Number with associated anomalies	4

We have found that it is not necessary to instill a radiopaque substance into the catheter to outline the upper tract. If, however, one feels oil is needed, then iodized oil should be used and retrieved through the catheter before it is removed. Barium should never be used. We no longer use any foreign substance. The full length x-ray will occasionally reveal other defects and complications such as pneumonia, situs inversus, malrotation, etc.

Early recognition of the malformation often prevents one of the most common and lethal complications, that of pneumonia, which, when first seen, usually involves the right upper lobe. This pneumonia is a product of several factors, the major one being reflux of oral secretions into the trachea, carrying with them bacteria from the esophageal pouch and mechanically obstructing the upper-lobe bronchus. Also, when a tracheo-esophageal fistula exists, there is reflux of gastric juices through the lower segment and into the tracheo-bronchial tree. The generalized pneumonitis produced by this occurrence presents a serious and often fatal complication. These infants should be kept in head-elevated position until surgical repair can be undertaken. As soon the diagnosis has been established, the infant should be transported to an institution which is capable of handling this type of patient.

We feel that surgery should be instituted as soon as possible, delaying only for diagnostic studies, necessary laboratory procedures and anesthetic preparation. Many more complications are avoided by early surgery than are avoided by delaying. Dehydration, if present to a severe degree, can be alleviated in a few hours while proceeding with the other preparations. I have been very fortunate in having an excellent group of pediatricians to share the responsibility and, also, anesthesiologists with wide experience in pediatric anesthesia. These physicians are not only available when this problem arises, but have a high interest in these infants. If pneumonia should be present, penicillin is immediately administered and systematic and frequent oro-pharyngeal aspiration of secretions is instituted. While awaiting surgery, the infant is kept in a warmed isolette and oxygen is administered by a funnel.

TABLE 2
DIAGNOSIS

1. Suspicion—Excess salivation
   Choking
   Cyanosis
2. Intubation—Number 6-12 catheter
3. Full-length x-ray with catheter in place (Contrast media not needed)

As soon as all preoperative preparations are complete and the operating room is in readiness, the infant is ready for the surgical approach. Two procedures are performed immediately, both under local anesthetic: First, a cut-down is made for the insertion of an intravenous catheter which must function for at least 48 hours and usually longer. This plastic catheter is inserted through the saphenous vein at the ankle to a position high in the thigh. It is kept open with 5 per cent glucose in water. Immediately upon completing the cut-down, a tube gastrostomy is established by inserting a No. 10-14 rubber mushroom catheter through a purse-string suture of 3-0 chromic catgut in the anterior wall of the stomach. This is done through a small left rectus muscle-splitting incision. The catheter is trimmed so that only a small

rim of the mushroom flange remains to hold the catheter within the stomach. The same suture that closes the purse-string about the catheter is then used to close the peritoneum and assures a union between the stomach and abdominal wall. It is only after this gastric vent has been put into place that the anesthesiologist can safely switch to general endotracheal anesthesia.

TABLE 3
OPERATIVE PROCEDURES

Venous cutdown
Gastrostomy
Transpleural approach
Immediate closure of the fistula
One layer oblique anastomosis
Accurate blood replacement

The anesthetic is conducted, utilizing the endotracheal technic and employing oxygen, nitrous oxide and cyclopropane. The infant is placed on a water-bath at 105° to minimize heat loss but, even so, temperatures as low as 96-95° are commonly seen. The temperature is monitored during the surgery by a rectal thermocouple.

Extreme care is exerted to avoid overhydration with the intravenous fluids. Blood is replaced as lost with low titer "O" negative blood and seldom is more than 20 cc. necessary.

TABLE 4
POSTOPERATIVE CARE

Accurate fluid replacement
Minimal handling of infant
Warm, moist environment with oxygen at 30%
Progressive gastrostomy feedings
Progressive oral feedings
Family education

The patient is placed on his left side and the head is held horizontal with the body by a small towel. The neck is flexed so as to make the esophageal pouch as available as possible during the dissection and anastomosis. The right pleural cavity is entered through a postero-lateral circumscapular incision overlying the 5th innerspace. A transpleural approach is made to the mediastinum, with the lung retracted anteriorly and inferiorly by a piece of smooth, transparent plastic drape to minimize trauma to the lung surface.

Attention is first directed to the lower esophageal segment in the area of the bifurcation of the trachea. Careful dissection isolates the tracheo-esophageal communication in this area. Great care must be utilized to preserve every millimeter of length of the lower esophageal segment and also not to compromise the rather precarious blood supply to this lower segment. The lower segment is then severed from the tracheal communication and the tracheal side is closed as flush with the tracheal wall as possible with two or three stitches of 5-0 silk. As soon as the tracheo-esophageal fistula is closed, the anesthesiologist can be more secure with his little patient.

Attention is then turned to the upper mediastinum and the upper esophageal pouch. A catheter is inserted by the anesthesiologist into the superior pouch to help identify this structure and make its dissection from surrounding tissue easier. This is particularly necessary in the area of the solid attachment to the trachea where a perforation of the trachea may occur. As the two segments are dissected free, it soon becomes apparent if a primary anastomosis will be possible. If this is not possible, the end of the upper pouch is brought out anterior to the left sternocleidomastoid muscle as a cervical esophagotomy.

The anastomosis is made on the oblique by cutting both the pouch and the lower segment at a corresponding angle. This will tend to decrease the amount of postoperative stricture and provide a larger lumen. The anastomosis is made with a single row of 5-0 black silk stitches, 8 to 10 usually being necessary for adequate closure. Anterior and posterior guide-sutures are placed and tied and the left side of the esophagus is sutured first, tying the knots on the inside. The remainder of the esophagus is then closed, after having inserted the catheter through the superior pouch and into the lower segment. This splints the esophagus for further suturing and prevents inadvertent inclusion of the opposite wall in a stitch. Following the anastomosis, the catheter is removed. The mediastinal pleura is left open, the lung re-expanded and the wound closed in layers with 4-0 and 5-0 silk. A single No. 12 catheter is placed in the posterior-lateral aspect of the thorax from base to apex and brought out

through a stab-wound in the 10th posterior interspace. This chest-tube is then attached to a waterseal of small size to facilitate easy transportation and handling.

The infant is returned to the intensive care unit in a pre-warmed and pre-oxygenated isolette. The oxygen is kept at a level of around 30 per cent as measured by an oximeter. The temperature is maintained at approximately 100° and mist is constantly kept in the isolette. The infant is placed in a head-up position of 15-20 degrees and for the next week is disturbed only as is absolutely necessary.

Postoperative precaution

We have felt that minimal handling in the immediate postoperative stage is essential in these extremely weak and fragile patients. Their temperature is not taken nor are they weighed daily. They are clothed only with a diaper which is changed when necessary. The gastrostomy tube is kept elevated through the hole in the top of the isolette and the intravenous tubing is brought out through a side-port. For the next 48 hours the total amount of fluid and nutrients are given to the infant through the intravenous catheter, utilizing 5 per cent glucose in water. After the 48th hour, feedings are started through the gastrostomy. The infant is inclined approximately 30 degrees at this time to facilitate the gastrostomy feedings. Glucose water is used initially and, if tolerated, the child is rapidly advanced to half-strength formula and then to full-strength formula. These feedings are given every 2 hours in increments of approximately 5 cc. initially and increased to 30 cc. per feeding as soon as it is tolerated.

On the eighth day, if there is no evidence of esophageal disruption and leak, oral feeding is started, utilizing glucose water given by eye-dropper. This small amount that is available through an eye-dropper is to prevent disruption of the esophageal suture-line by a large bolus of liquid. On the 10th day, half-strength formula is given by bottle through a nipple with a small hole so that the infant cannot swallow a large bolus at any time. On the 13th and 14th day the infant is getting full-strength formula and is being fed and cared for by the mother, so she no longer has fear of handling her child. If no feeding complications occur, the gastrostomy tube is removed on the 12th postoperative day. No sutures are needed to close the gastrostomy and only a small tape dressing is used.

We have been very satisfied with the single layer, oblique anastomosis of the esophagus. Still, we have found it necessary to dilate six of the cases postoperatively to date. There has been only one postoperative disruption of the anastomosis and this was caused approximately 6 hours after surgery, by too vigorous pharyngeal aspiration. This leak closed spontaneously without complications.

TABLE 5
COMPLICATIONS

Preoperative
Pneumonitis
Atelectasis
Associated anomalies
Dehydration
Postoperative
As above plus—
Esophageal anatomic leak
Stricture
Subsequent perforation
Empyema, etc.

It is my opinion that the overall good results obtained in this series has been due to many things. Most important, in my estimation, is early recognition and operation under ideal conditions, utilizing the trained operating room personnel and the excellent anesthesia that we have available. Second, rapid transpleural surgery utilizing an oblique anastomosis in one layer and preceded by gastrostomy in all instances. This gastrostomy provides a vent during the induction and early part of the surgery and is later used for feeding the infant when fluid and protein requirements are necessarily high. Third, the excellent postoperative care and attention these infants get in our intensive care area. They are observed constantly but handled only when absolutely necessary. In two instances, we have had cardiac and respiratory arrests. These have been immediately recognized and the infants resuscitated by an excellent nursing staff. I cannot pay too high a tribute to these dedicated nurses.

TABLE 6
FLUIDS AND FEEDING

Intravenous only	48 hours
Gastrostomy	48 hours—8 days
Glucose water—progressive formula	
5 cc-60 cc	12 hours
Oral	After 8 days
Eyedropper	2 days
Glucose water—progressive formula	

Conclusion

In assuming responsibility for these small patients, one must develop a philosophy best exemplified by the attending pediatrician in one case. When, as multiple defects became apparent, I asked if we would be justified in operating on this child he answered, "Do we have any justification for not operating?" I know of no patients who need more intensive and alert postoperative care and none who present a more difficult overall problem. The successful management of a complicated esophageal atresia-tracheo-esophageal fistula patient is an overall team-effort from recognition to discharge. •

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University of Utah nurse-midwifery program*

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These dedicated women are not poorly prepared doctors, but expertly prepared nurses.

DESPITE A GRADUAL FALL in the national birth rate, the absolute number of births is presently stable and is due to rise toward 6 million births a year from its present level of 4 million. This burden comes at a time of national acceptance of the safety and comfort of hospital obstetrics, so that there is a great and increasing dearth of obstetrical personnel. This shortage is presently seen most clearly among physicians in large hospitals devoted to care of indigents in great metropolises. It is perhaps actually even more severe among nurses.

In September, 1965, the University of Utah College of Nursing inaugurated a two-year graduate program in Maternal and Newborn Nursing leading to a Master of Science degree and a certificate in Nurse-Midwifery. It is the third major to be developed in the graduate school of the college.

This two-year program was developed to prepare highly competent clinical specialists in nursing and nurse-midwifery who can also function as teachers, supervisors, consultants or research workers in nursing. The need for such prepared individuals is acute through the United States. A recent survey of hospitals in Utah with 50 or more beds disclosed that of the twenty maternity nursing service supervisory positions, only one was filled by a nurse with a graduate degree as evidence of advanced training and that degree had not been obtained in maternal and newborn nursing. Several hospitals are without a supervisor. Furthermore, diploma, associate degree and basic collegiate programs within the state are in need of teachers with graduate specialization in maternal and newborn nursing. To date, only a few of the approximately twelve individuals teaching in this area have advanced degrees.

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Dean Mildred D. Quinn of the University of Utah College of Nursing has stated that "the University of Utah is the only university in Utah and in several of the adjoining states to have a nationally recognized, accredited graduate program in nursing. We do and should supply to institutions in our own state and in nearby states a large proportion of the clinical specialists, teachers and administrators in nursing."

Nurse-Midwifery—a specialty

To prepare the highly skilled maternity nurse specialist, it is necessary that she be competent in care throughout the maternity cycle, including normal delivery. It is for this reason that ours became the first graduate program in the west to include nurse-midwifery as an integral part of the major. Eastern universities which offer similar programs are Yale, Columbia, The Catholic University of America and the New York Medical College.

To many physicians and nurses the term "midwife" conjures up an image of a woman without professional nurse preparation, who by virtue of either casual training or unsupervised experience delivers babies. Until recently the State of Utah had a law which regulated the licensure and practice of midwives. Utah is unique in that it was one of the few states to provide special training and preparation for selected women in the early days of its founding. The practice of many of these women was of excellent quality for the period of time in which they functioned. However, the modern nurse-midwife in our country today is a person completely apart from the lay midwife.

The American College of Nurse-Midwifery recognizes the nurse-midwife as a specialist in much the same way that medical specialty boards recognize physicians. It has defined the nurse-midwife as ". . . a Registered Nurse who by virtue of added knowledge and skill gained through an organized program of study and clinical experience recognized by the American College of Nurse Midwifery, has extended the limits (legal limits in jurisdictions where they pertain) of her practice into the area of management of care of mothers and babies throughout the maternity cycle so long as progress meets criteria accepted as normal."

The nurse-midwife, prepared at the master's level, is a clinical specialist in maternal and newborn nursing, with additional preparation and experience in obstetric management of normal mothers and newborns. Her preparation enables her to function effectively as a teacher in basic baccalaureate or graduate nursing programs; as an instructor or director of parent education programs; a supervisor of obstetrical nursing services, clinics or maternity centers; a consultant to official and voluntary agencies; a researcher in nursing and nurse-midwifery; a participant in special projects in maternal and child care; or in direct practice as a nurse-midwife. In direct practice she may be employed in rural areas, in large city or county hospitals, in foreign service such as the Peace Corps or World Health Organization, or as a part of a private group practice, with a team of obstetricians and gynecologists. In such a position she could provide comprehensive care including preparation for childbirth and parenthood for all patients, and in addition manage the obstetrical care, including delivery, of selected normal patients. Some of these roles not only free the physician for more time with patients who have obstetric and gynecologic pathology, but as a nurse-midwife she adds a new dimension to professional nursing care which has unique benefits for patients and increased satisfaction for herself. It should be noted that in any position of direct practice, the nurse-midwife is never an independent practitioner, but always functions in a setting where competent medical consultation and guidance are available when needed.

Expertly prepared nurses

Vera Keane, President of the American College of Nurse-Midwifery and Director of Maternity Center Association, states that "nurse-midwifery helps the nurse who is seriously interested in maternity care to do excellently what she must now do merely adequately, or in some instances, inadequately, because of lack of preparation. . . . She can do these things only if she maintains a clear vision of herself as a nurse in the fullest

sense, making her unique contribution, recognizing the safe limits of her own practice. . . . We are not poorly prepared doctors, but expertly prepared nurses."

The graduate student in nursing must meet the same requirements for entrance and graduation as do other students in the Graduate School of the University. She takes classes in research, writes a thesis and has one quarter practicum in either teaching, supervision or consultation. She attends core classes with other graduate nurse students and has a minor or supporting work in other departments of the University. Approximately two-thirds of her clinical and theory hours in nursing classes are allotted to maternal and newborn nursing and one-third to nurse-midwifery.

Training through experience

Experience is provided in teaching preparation for childbirth and parenthood classes and in giving nursing care to patients during labor, delivery, and the postpartum period. A major focus is on the family as a unit and on prevention of perinatal problems, such as prematurity, through intensive prenatal guidance and support. The student has an opportunity to develop specific knowledge and skills needed for care of normal, premature, and ill infants.

The nurse-midwifery portion of the program is conducted in cooperation with the Department of Obstetrics and Gynecology at the University Medical Center. Resident and staff physicians participate in teaching both in the clinical areas and in formal classes. Students attend regular obstetrical conferences and rounds, and sit in on some of the classes given for medical students, in addition to their own classes taught by faculty in the College of Nursing.

A description of how the nurse-midwifery service actually functions at the University Medical Center may be of interest. During the academic year the graduate students function as nurse-midwives in managing the prenatal course of a group of selected patients, both in the clinic and at home. When their patients come into the hospital, they give them nursing care throughout labor, delivery, and the postpartum period. During selected periods of the year they function as nurse-midwives in the hospital areas as well.

At the first prenatal visit the nurse-midwife takes a history and evaluates the patient obstetrically under the direction of her instructor. This includes examination of the breasts, abdomen, legs and pelvis (measurements, Pap smear, speculum and bimanual exam). The information obtained is charted and reported to the resident, who then does a complete medical examination and also confirms the findings of the pelvic exam. If the patient is found to be essentially normal with prognosis for spontaneous delivery, the nurse-midwife service is explained to the expectant mother and a verbal consent is obtained for care by the nurse-midwives. To date only one or two mothers out of over a hundred have refused this care.

On subsequent visits the patient is examined by the nurse-midwife student and her instructor and the findings charted. Time is spent at each visit in preparing the expectant mother for her coming experiences and in helping her to cope more comfortably and capably with current questions, problems, or discomforts. The resident is consulted whenever there is any question regarding deviation from the normal course of events. Consultation is readily available as the resident who is supervising the medical students in their prenatal clinic is just a few doors away from where the nurse-midwifery patients are being seen. The residents write prescriptions as needed for the nurse-midwifery patients.

Three patient categories

When the patient is admitted in labor she is placed in one of the following categories:

1. *Nurse-Midwifery Management.* These are the patients who have been seen by the nurse-midwives in the clinic and other selected normal patients. All decisions regarding labor and delivery, including medication, are made and carried out by the nurse-midwife student under the direct instruction and supervision of the nurse-midwifery instructor. All orders for medication are signed by the resident. The nurse-midwife manages the course of labor, gives supportive nursing care and delivers the infant. She starts I.V.'s, does

paracervical and pudendal blocks and episiotomies when these procedures are appropriate.

2. *Nursing Management.* Patients in this group include unregistered patients, private patients, patients with complications or patients who are normal and not being carried by the nurse-midwifery service. The nurse-midwife follows the course of labor, does any examinations or workup as requested and gives supportive nursing care. Decisions regarding the management of labor and delivery are made by the physician and he delivers the patient. The student nurse-midwife may scrub in to assist or for her own learning.

3. *Medical Management—Nurse-Midwifery Delivery.* These are the few patients whose medical condition is such that they would not be candidates for the nurse-midwifery service, but whose obstetrical course in labor and delivery is expected to be essentially normal. The resident manages the case, the nurse-midwife cares for the mother as described in 2 (above) and delivers her. The instructor and resident together decide which aspects of obstetrical management will be retained and which delegated.

On admission, all patients have a medical examination by the intern or resident. The resident is always notified whenever a patient is taken to the delivery room. The instructor and student scrub together and manage the second and third stage, examine the infant, write up the delivery and evaluate and care for the mother in the first postpartum hours. Postpartum orders are signed by the resident.

The mother and baby are examined every day and findings charted. Nursing care, including teaching, is carried out. The nurse-midwife does the postpartum discharge exam with the resident. At the six weeks checkup the nurse-midwife takes a history, obtains the blood pressure, hematocrit, weight, and examines the breasts, abdomen and legs. She then reports to the resident who does a complete medical examination. They do the pelvic examination together.

At all times the mother is aware that the physician is immediately available should he be needed, yet she has the additional satisfaction of a close personal relationship with someone who has the time to answer her questions, prepare her for the experience and become acquainted with her family and their needs and concerns in relation to her childbearing. This team approach is evidenced by the excellent working relationship between the nurse-midwives and the resident and attending staff. Consultation is sought unhesitatingly, and physician and nurse-midwife together confer and agree upon the best course of action. Although both recognize that the ultimate decision is the physician's, every effort is made to arrive at decisions jointly. Both recognize the contribution of the other as adding a unique component to the total care of the mother and infant.

Our aim—to improve quality of obstetrical care

This program is, of course, in its infancy and it would be presumptuous to state its eventual achievements. So far it has met with acceptance by all the professionals involved, despite some skepticism at the outset. Patients have responded well. The nurse-midwife, whose field of practice and area of concern are inherently more restricted medically than that of the physician is liberated thereby to lavish attention on the very areas the physician is likely to leave untouched—the intimate womanly details—and patients appreciate this.

It is our expectation that the severe shortages of supervisory and teaching nursing personnel are such that even when pressure due to the expansion of the number of births—an expansion expected to outstrip by far the number of physicians trained in obstetrics—becomes severe, that the number of nurse-midwives in practice will remain restricted. Such regions as remote, sparsely populated areas will certainly have to be serviced first. The extent to which the nurse-midwife will fit into the pattern of hospital and group medicine can only be learned from experience. Whatever the fate of nurse-midwifery is will, in the final analysis, depend on the way in which it helps to improve the quality of obstetrical care. •

Acute renal failure following incompatible blood transfusion*

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The nature of the renal lesion following incompatible blood transfusion reactions is described, and special problems related to the clinical course and management of the ensuing acute renal failure are discussed. Although many patients are successfully treated with conservative measures, effective methods of dialysis (artificial kidney and peritoneal dialysis) may be applied in the more severe cases.

INTRAVASCULAR HEMOLYSIS following the administration of incompatible blood is a serious complication of transfusion therapy and frequently leads to acute renal failure (ARF) and death. The true incidence of hemolytic reactions is difficult to determine but is said to vary from 0.1 to 0.5 per cent.[9] This tragic consequence of a valuable and often life-saving measure may be the result of either technical errors in the blood-bank or errors of administration on the ward or in the operating room. The more severe large-volume transfusion reactions occur while the patient is undergoing surgery. The masking of the usual signs, and particularly the symptoms, of a transfusion reaction in the anesthetized patient presents a particular challenge to the anesthesiologist, since little more than hypotension may indicate the occurrence of a reaction and evidence of hemolysis may not be immediately apparent. In this paper attention will be focused on the problem of the ensuing renal failure and its management.

The nature of the renal lesion

It is not known with certainty why intravascular hemolysis leads to acute renal failure. A pattern of patchy tubular degeneration with disruption of the basement membrance, so elegantly described by Oliver,[8] is the usual pathologic process in many cases of ARF following shock, burns, trauma, transfusion reactions, and inadvertent introduction of distilled water into the blood stream. The presence of large number of hemoglobin casts in the renal tubules suggests a causative role in the sense of mechanical tubular blockage. Intravenously administered purified human hemoglobin does not in itself cause renal damage, and it is currently assumed that other factors must be operative.

It is likely that the precipitation of hemoglobin in the tubules follows, rather than causes, a tubular function abnormality and is influenced by volume of urine flow and pH of tubular urine. Despite the technical difficulties of measuring the renal blood flow in the face of oliguria, some investigators believe that renal ischemia, incident to the release of a vasoconstrictor substance or resulting from hypotension during the active period of intravascular hemolysis, is the most important factor in the production of renal damage,[7] but this concept remains controversial. Franklin emphasizes that ". . . the most successful production of acute renal failure in animals has been achieved by the administration of hemoglobin or its breakdown products in conjunction with renal ischemia."[3]

Clinical course of acute renal failure

Enormous advances in the recognition, understanding, and management of ARF have been made since the late World War. Despite the diversity of causes that may lead to ARF, the clinical course in most patients runs a rather stereotyped course and may conveniently be divided into three phases.

1. ONSET: Rapidly diminishing urine volume follows an appropriate provocation — surgery, intravenous hemolysis, massive blood loss, burns, and shock from almost any cause. A low urine volume, particularly when associated with a specific gravity around 1.010, and a relatively high sodium concentration, should alert the physician to the possibility of acute tubular damage. Under these

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circumstances water-loading to "force a larger urine volume" is unwise and merely induces rapid expansion of body water which may lead to water intoxication and pulmonary edema.

2. PHASE OF SUSTAINED OLIGURIA: This phase, with urine volumes ranging from ten to several hundred ml. daily, may persist from several days to several weeks. Complete absence of urine formation is unusual and generally indicates an obstructive urinary tract lesions. The uremic syndrome with its protean clinical manifestations and rapidly advancing azotemia, anemia, hyponatremia, acidosis, hyperkalemia, and alterations in water balance constitutes a serious threat to the patient's survival.

3. PHASE OF DIURESIS: After a variable period of oliguria diuresis ensues, abruptly in some patients, more gradually in others, and after a period of days or weeks during which the patient passes large quantities of dilute urine, the chemical and clinical abnormalities of the oliguric phase gradually return toward normal. Although connoting "recovery" of the renal tubular lesion, this phase carries with it a high mortality rate, and death, either from intensification of uremia or hyperkalemia during the early days of diuresis, or, more commonly, from infection or other deleterious residua from the original disease process, may occur. Should these hazards be avoided, however, one can anticipate complete "clinical recovery" in one to two months, although abnormalities in renal function may persist for a longer period of time.

Within this brief space one unfortunately cannot describe the many other fascinating facets of ARF, the intriguing variability of the syndrome, or the many special biochemical and clinical problems that arise.

Fig. 1 illustrates a fairly mild case of ARF. The patient,* a 22-year-old woman, was given one pint of blood because of postpartum bleeding three days before her transfer to the Latter-day Saints Hospital. The patient had been given Rh-positive blood, despite the fact that she was Rh-negative and had received a transfusion of Rh-positive blood from the same donor previously. During the transfusion she felt chilly and noticed twitching. During the following day only 300 ml. of urine was passed (evidence of hemoglobinuria or hemoglobinemia had not been sought), and by the time of her admission to the Latter-day Saints Hospital urine volume had decreased to 10 ml. per 24 hours. Her oliguric phase persisted for ten days, and despite progressive azotemia she remained remarkably asymptomatic, never exhibiting hypertension, bleeding, or the gastrointestinal or nervous system symptoms commonly seen in uremia. Indeed she was ambulatory throughout most of her course and seemed quite content with her daily oral ration of 900 ml. of water and jelly-beans. Hyperkalemia never became a problem. Clinical recovery was complete after a short diuretic period.

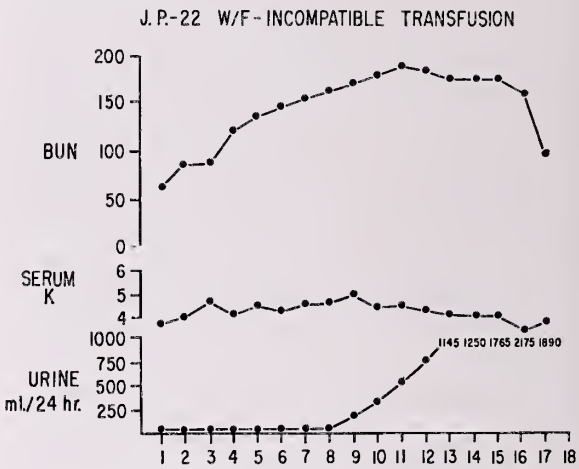

Fig. 1. Graphic record of BUN, serum K, and urine vol. of patient with acute renal failure.

Although our artificial kidney team, established in 1958, has had considerable experience with dialysis in ARF following shock, burns, and trauma, and has treated a number of poisoned patients, an occasion to dialyze a severely oliguric patient following incompatible blood transfusion has not arisen.

"Conservative" management

Because the tubular degeneration in ARF is potentially a reversible lesion, one can optimistically anticipate improvement in renal function in many cases. The problems in management, therefore, are largely directed toward "tiding over" the patient during the period of oliguria and early diuresis with

*Permission to include this case was kindly granted by Dr. A. Hamer Reiser of Salt Lake City, Utah.

the aid, in more severe cases, of dialyzing procedures. Measures directed toward the kidney lesion itself, such as renal decapsulation, have now been largely abandoned. In broad terms, the inclination of the attending physician is usually to do too much for the patient rather than too little. Fortunately, however, the days seem to be past when overzealous treatment would result in waterlogged, over-alkalinized, over-salted patients, who would frequently die with pulmonary edema, cerebral edema and convulsions.

WATER BALANCE: There is general agreement that water given to the patient, either in the form of oral fluids or intravenous hypertonic glucose solutions, should not exceed the average insensible daily water loss (500 to 700 ml.) added to the 24-hour urine volume. Electrolytes should not be given, unless there is a significant loss of gastrointestinal fluids which may be replaced quantitatively with 0.45 per cent saline solution.

ACIDOSIS: Measures to correct metabolic acidosis are generally not needed except in the more severe cases. If the CO_2 combining power falls to less than about 10 mEq./liter, intravenous sodium bicarbonate or sodium lactate may be given. The intent should be to correct the acidosis only partially, not to raise the CO_2 combining power to normal.

ANEMIA: A fall in the volume of packed red cells to levels of 20 to 30 per cent is almost universal in ARF, and reflects both red cell hemolysis and hemodilution due to increase in plasma volume. Unless active hemorrhage occurs or the VPRC falls below 20, it is generally wise not to give blood transfusions, both because of the risk of acute pulmonary edema and because the anemia is usually but little improved by transfusion. Should blood replacement become necessary, packed red cells should be slowly administered intravenously.

HYPONATREMIA: The level of the serum sodium is rarely of any practical help in the management of ARF, as hyponatremia (levels of 120 to 130 mEq./liter are common) is universal and represents serum electrolyte dilution rather than "lack of salt." Efforts to "raise" the low serum sodium level are to be condemned as useless and frequently harmful to the patient.

HYPERKALEMIA: Some degree of serum potassium elevation is seen in nearly every patient with ARF. Those patients with sequestered blood, a purulent infection, high fever, or serious crushing wounds of any type are particularly likely to release large quantities of intracellular potassium into the extracellular fluid with the attendant danger of sudden death due to cardiac arrest. No given level of serum potassium can be cited as "the danger point," as this is highly variable, but it is good practice, when the potassium has risen to 6mEq./liter to check both the serum level and the electrocardiogram at 12-hour intervals. Death from hyperkalemia has occurred even several days after the onset of the diuretic phase (this early dilute urine removes little potassium) so vigilance must not be relaxed. Cation exchange resins may be helpful in lowering the serum potassium, and intravenous glucose and insulin may be life-saving for an hour or two, but only dialytic measures (see below) can effectively remove potassium at a rate sufficiently rapid to remove the danger of hyperkalemia for a significant period of time.

UREMIC SYNDROME: No attempt will be made in this brief report to detail the symptomatic treatment of the uremic syndrome. However it seems important to point out that attempts to feed a nauseated, anorectic patient are frequently futile and lead to marked discomfort. Carbohydrate by mouth is sometimes well tolerated, but large amounts of carbohydrate may now be given comfortably by the intravenous route using 50 per cent glucose with small amounts of added prednisone in peripheral veins without much danger of thrombophlebitis. Administration of protein in any form is, of course, to be avoided.

Using the above general principles of management, one can successfully treat many patients with ARF without recourse to dialysis.

Dialysis in acute renal failure

There are two prime indications for dialysis in this condition:

1. HYPERKALEMIA: Serum potassium

levels about 7mEq./liter, or lower levels that are rising rapidly, especially if associated with the characteristic electrocardiographic changes of hyperkalemia, are generally accepted as indications for immediate dialysis. With the use of the artificial kidney the serum potassium can be lowered rapidly and the electrocardiographic changes swiftly reversed toward normal (Fig. 2).

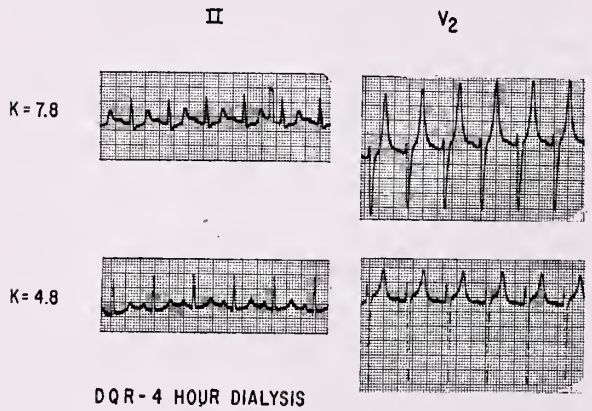

Fig. 2. Typical ECG changes of patient with hyperkalemia.

2. PROGRESSIVE UREMIC SYMPTOMS: Stupor, nausea and vomiting, twitching, and a generally deteriorating clinical course can be benefited by dialysis. The absolute level of the blood urea nitrogen, correlating as it does only imperfectly with the severity of the uremia, cannot be used as the sole guide to the proper time of dialysis. A rapidly rising blood urea nitrogen, and a rapid downhill clinical course, serve as more accurate indications. In recent years enthusiasm has been expressed in some dialysis centers for "prophylactic dialysis," applied daily as soon as ARF is apparent, in an effort to prevent the uremic syndrome and its complications rather than to treat it later on an emergency basis in a critically ill patient.

Two effective methods of dialysis are available today:

1. EXTRACORPOREAL DIALYSIS: The recent development of a commercially available artificial kidney (the Kolff "twin-coil" kidney) has made it possible for larger general hospitals across the country to have available this rapid and effective method of dialysis.[5] The technics and indications for its use, thoroughly described in the literature, will not be detailed here. It has other important clinical applications besides ARF. Among these are removal of exogenous poisons (barbiturates, salicylates, bromides, etc.) and its ability, by ultrafiltration, to remove water from the body of patients with congestive heart failure and other edematous states. It must be emphasized that a trained team of physicians and technicians is essential to its proper use.

2. PERITONEAL DIALYSIS: This useful procedure, which can be performed at the bedside, has gained popularity in the last few years because the solutions and abdominal cannulae have been made commercially available.[6] A sterile electrolyte solution is introduced through a cannula into the peritoneal cavity; after an appropriate period of equilibration, the fluid is removed by gravity and fresh dialyzing fluid is introduced. In general it may be said that peritoneal dialysis can achieve the same results as the artificial kidney, although at a considerably slower rate. The risk of peritonitis is very small, and peritoneal dialysis can be used in smaller outlying hospitals where an artificial kidney might not be available.

Prognosis and mortality

ARF has in general a more favorable prognosis when caused by incompatible transfusion reactions than when caused by trauma, burns, or severe shock. Important determinants in prognosis are the age of the patient, the degree of accompanying tissue necrosis and infection, and the integrity of the cardiovascular-renal system before the initiating event. It is interesting that even before dialytic measures were available, and indeed even before the pathophysiology of ARF was understood to any appreciable degree, a large number of these patients made full recoveries. For instance, mention might be made of Goldring's report in 1936 of seven cases of ARF following intravenous hemolysis, of whom four recovered.[4] Binder reports six cases with oliguria lasting longer than 48 hours, with only one death.[2] None of these patients was dialyzed.

It is difficult to judge the true mortality of this condition because many cases are not reported and those that are reported are generally more severe cases requiring dialysis.

Barlas and Kolff report sixteen cases of ARF following blood transfusions.[1] Four patients recovered after conservative therapy. Twelve patients required treatment with the artificial kidney, with recovery in nine. The authors stated that "In six of them recovery would have been very difficult or impossible without hemodialysis." ●

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Glutethimide—long-term use

Thomas Ray Broadbent, MD, and Robert M. Woolf, MD, Salt Lake City

This case report on long-term use of Glutethimide, or Doriden, bears out, with clinical and laboratory data, the safe use of this fairly effective sedative.

MEDICAL JOURNALS frequently publish single case reports of bizarre or dangerous side effects which have been drug-induced. Not often does the physician read about an eminently satisfactory result with a sedative known to be subject to frequent abuse. Many scientific papers have documented (to a greater or lesser degree) acute and chronic intoxication, as well as addiction, even while admitting the efficacy of the compound if used in recommended dosage. The following single case report records the history of a patient who took glutethimide daily for about eight years.

Report of a case

Mr. C.N.B., aged 81, was involved in an automobile accident on April 25, 1954, when his car ran into an open sewer trench. On hospital admission, examination revealed multiple fractures of the nose; compound, comminuted fractures of the mandible bilaterally; and a basal skull fracture. The remainder of his physical examination was normal for his age with his blood-pressure recorded at 100/80; temperature, 99° F.; pulse, 74; and respirations, 18. Blood and urine examinations were likewise normal.

On April 30, 1954, after supportive therapy following his injury, an open reduction under general endotracheal anesthesia was done with wire-fixation and pinning of the mandible and realignment of the fractured nose. Lacerations were repaired, and the basal skull fracture was treated expectantly. Repeated complete blood-count and urinalyses on the same day were normal.

He was discharged on May 4, 1954, following an uncomplicated postoperative course. At that time he was placed on glutethimide 0.5 gm. each night for assistance in sleeping.

The patient progressed well. In later follow-ups and upon re-examination five years later (November 4, 1959), he had no problems relative to his injury. The following history was obtained: By preference, he had continued to take glutethimide 0.5 gm. at bedtime in order to improve his sleep. He reported no side effects, no craving for the drug, but had noted improvement in its effect by increasing the dose to two tablets (1 gm.) and had been on that dose each night for about one year. He experienced no drugged or "hangover" effect in the mornings and had experienced no gastrointestinal upsets due to the glutethimide. Though he was not experiencing pain or distress, he decided to continue this medication.

The sedative was allowed for sleep, but the dose was decreased to 0.5 gm. at bedtime. Off and on, the patient voluntarily increased this to 1 gram. On January 19, 1963, at age 89, the patient expired in cardiac failure.

A review of his lab work revealed the following:

URINALYSIS

	4/25/54	4/30/54	12/11/62
Sp. Gr.	1.000	1.020	
Color	Clear	Clear	
Albumin	0	0	0
Sugar	0	0	0
pH	5	5.1	5
Acetone	0	0	0
WBC	5–7	0	2–3
RBC	0–2	0	0
Casts	0	0	0

COMPLETE BLOOD COUNTS

	4/25 /54	4/30 /54	11/4 /54	11/25 /59	12/23 /59	12/11 /62
Hgb (gms) ..	13.0		15.4		12.4	12.4
Hgb (%)	86.5		99			80
Hematocrit (%)	43		50			40
WBC 4,600		7,050	5,900	6,000	6,450	7,250
Polys	57	71		57		
Lymphs	37	18		39		
Mono	5	4		3		
Eosin	1	5		1		
Baso	0	1		0		
Myelo	0	0		0		
Metamyelo ..	0	1		0		
Platelets	adq.	adq.		adq.		

Summary

Though on glutethimide 0.5 gm. at bedtime (and often 1.0 gm.) from May, 1954, to January, 1963, an elderly patient experienced assistance in better sleeping without any subjective complaints relative to use of the drug. On no occasion did he have any clinical or hematological signs of toxicity. ●

Samuel Clifton Baldwin pioneer orthopedist*

Robert W. Carson, MD, Salt Lake City

For the Western Orthopedic Association's first meeting in Salt Lake City, it is appropriate to pay tribute to Utah's first orthopedist and to establish his proper place in history. Dr. Baldwin has been overlooked in the previous histories of Western Orthopedics published by Drs. Winnet Orr and Warren White, probably because he was not a prolific writer or inventor and was hundreds of miles from the nearest medical center. He was, however, the third orthopedic surgeon in the West; despite a limited education he became internationally known and respected by his contemporaries as a dedicated practitioner. Although he has no long bibliography, his work on muscular dystrophy led to grants for the University of Utah which have amounted to several million dollars. These grants now support a significant proportion of the research budgets of the departments of Medicine and Biochemistry and in these departments he is still remembered with some reverence. He also deserves a place in the memory of the orthopedic community.

Dr. Baldwin came to medicine at a relatively late age. Born in Louisville, Kentucky, in 1855, his schooling was interrupted at the age of 16 by his father's death, and only after ten years as family breadwinner did he begin his medical studies. He spent a year of preceptorship with a Louisville physician and then, after two five-month terms at the Louisville College of Medicine, was awarded his degree in 1884. During the summer of 1883, young Baldwin's preceptor had taken him to lectures at Belleview Hospital, where he came under the influence of Dr. Louis Sayre. Here, undoubtedly, the twig was bent. The era of specialization was just beginning, and it was said that a doctor should have ten years of general practice before becoming a

Samuel Clifton Baldwin, about 1896

*Read at the Western Orthopedic Association Meeting, Salt Lake City, October 12, 1965.

specialist. Dr. Baldwin fulfilled this requirement by practicing three years in Kentucky and seven in Montana before moving to Salt Lake City to become an orthopedic surgeon.

When Dr. Baldwin arrived in 1894, Salt Lake City with a population of 45,000 was the fifth largest city in the West. San Francisco and Denver were much larger; Los Angeles, Portland and Seattle were of similar size; and Tucson and Phoenix were mere villages of 4,000 to 5,000 people. At this time, there were only two orthopedists west of Kansas City—Dr. Harry Sherman had been in San Francisco for eight years, and Dr. George Packard, a charter member of the American Orthopedic Association, had been practicing in Denver for three years.

Dr. Baldwin gradually acquired his specialty education by traveling extensively in the East and in Europe. As a disciple of Dr. Sayre, he was an artist with plaster and a firm advocate of plaster-fixation for back problems. For the application of body jackets, his high-ceilinged plaster room was occupied by a large tripod from which his patients were suspended by a leather collar. Disc surgery was unknown before Dr. Baldwin was 80, and his results with casts were probably better than those obtained with most earlier surgical methods.

As a widely travelled orthopedist, Dr. Baldwin arranged for Dr. Adolph Lorenz of Vienna to visit Salt Lake in 1902. Lorenz had been commissioned by the Armour family of Chicago to perform his bloodless hip surgery on their daughter, Lolita, reportedly for a fee of $50,000. After holding several clinics in Chicago, Dr. Lorenz moved westward, holding clinics in Denver, Salt Lake City and San Francisco. Dr. Baldwin arranged a clinic of congenital hips for him at Holy Cross Hospital. Orthopedic surgery has probably never received such widespread publicity as attended Dr. Lorenz's sweep across the country; the great surgeon was heralded as an international hero. In the Salt Lake Tribune, two feature articles preceded his visit and, on the following day, two full center-columns of the front page recorded the local drama. The patients' families, reporters, and curiosity seekers congregated in the operating room, responding to his theatrics with gasps and applause. At the next AOA meeting, congenital hips were the focus of attention and, when follow-up reports of Dr. Lorenz's cases were presented, a controversy raged over the press-agentry and the originality and merit of his method. At this 1903 meeting, Dr. Baldwin was installed, becoming the third member in the West, and bringing the total membership to fifty-six.

When World War I finally closed the era of strap-and-buckle orthopedics, Dr. Baldwin was in his sixties. In his presidential address to the Utah State Medical Association in 1917, he emphasized the Army's need for experienced older doctors, then promptly volunteered as a lieutenant. He rapidly rose to the rank of Lieutenant Colonel and ultimately served as Chief Surgeon for the Port of New York Authority Hospital System. He was discharged shortly after the Armistice and was soon promoted to full colonel in the Army Reserves. He was denied a request for active duty at the beginning of World War II because of his age.

Devotion to crippled children

Throughout his career, Dr. Baldwin's major interest was in the treatment of crippled children. At the inception of the Mormon Primary Association's program for the care of crippled children in 1911, and for many years thereafter, Dr. Baldwin served as its only orthopedist. When the Primary Children's Hospital was incorporated, he organized the first medical staff and served as Chief of Staff until his resignation in 1937, at the age of 82. He gave constant devotion to "his children" and "his hospital" for more than twenty-four years.

In his last years, Dr. Baldwin devoted more and more of his time to the project that ultimately became his legacy to medicine. For years the doctor had been compiling a series of muscular dystrophy cases and experimenting with various forms of treatment. He determined that these were definitely hereditary and more common in the Intermountain West than would be expected from published reports. There were large polygamous families in Utah and the thorough geneological records of the Mormon church afforded an ideal opportunity for the study of hereditary diseases. A barrier of supersti-

tion existed, however, and crippled children were often hidden from outsiders. Where other groups failed in their attempts to ferret out these "stigmatized" children, Dr. Baldwin gained the confidence of their families and convinced them of his sincere intent. By 1941, he had collected more than 400 dystrophy cases. He had corresponded with private charities such as the Carnegie and Rockefeller foundations and with other authorities on muscular dystrophy, seeking support for his project, but without success. Eventually he persuaded the president of the University of Utah to appropriate a very small sum of money and to provide a brief leave of absence for a professor of genetics to study his cases. Finally, in 1944, a little political maneuvering set the stage for a development beyond Dr. Baldwin's wildest dreams.

Senator Elbert Thomas of Utah was chairman of the Senate Committee which held the purse strings for the United States Public Health Service. Dr. Thomas Parran, Surgeon General for the Public Health Service, was invited to Utah to give the commencement address for the first graduating class of the new four-year medical school in September, 1944. On this occasion, both Dr. Baldwin and Dr. Parran were awarded honorary doctorates of science. Dr. Baldwin spent most of the day with Dr. Parran, showing him dystrophy cases and telling him of this unique opportunity for research. Within one month, Dr. Baldwin died of coronary thrombosis. Several months later, the U. S. Public Health Service opened its new post-war program of medical research grants to replace those of the Armed Services, begun during the war. This program, which now amounts to almost a billion dollars a year, began twenty years ago with an allotment of one hundred thousand dollars. That first year the entire amount came to the University of Utah in the name of Dr. Max Wintrobe for the study of hereditary diseases. This grant is still active and now, along with ancillary grants, some of which are grouped together as the Baldwin Memorial Fund, amounts to four hundred thousand dollars a year. The earliest papers concerned the muscular dystrophies and were published by Doctors Wintrobe, Tyler and Stephens in the Annals of Internal Medicine, 1950. One pedigree of fascio-scapulohumeral dystrophy is still the largest ever published. A polygamous Utah settler from England was traced through six generations and 1,249 descendants among whom 159 cases of dystrophy were found. Since then, the studies have expanded into other areas of hereditary and degenerative diseases and, to date, some 550 papers have been published.

Dr. Baldwin is described as quiet and modest, a courtly gentleman of the old South. He was short of stature with handsome features and impeccable attire — usually pinstripe trousers, cutaway coat, carefully knotted maroon tie and a fresh red boutonniere. His coat pockets carried jelly beans to be dispensed to the children on his daily rounds. The doctor was elderly when the automobile arrived and though he was quick to adopt this new device, he never quite mastered it. Allegedly, even on the highway, he drove his car in low gear. The doctor had little regard for money and was never known to send a bill. He lived modestly and accumulated almost no estate except for his home. His only indulgence was travel, to improve his knowledge and skill as an orthopedist. He had an eye for bargains and apparently never scrapped anything. He once bought the canned goods from a burned out grocery store, providing his family with an almost infinite, albeit unpredictable variety of meals. His roll top desk was legendary for its precarious accumulation of journals and mail but he kept no records except for his dystrophy collection.

Although sometimes stern in surgery and emphatic in the conference room, he had a brusque wit and was generous and kind to his younger colleagues. His last years were marked by the loneliness of a man who had totally dedicated himself to his work and had outlived his contemporaries. He was a familiar figure at the annual meetings of the American Orthopedic Association (AOA), and the American Academy of Orthopedic Surgeons (AAOS), where he was a guest at the presidential table several months before his death.

Dr. Baldwin died at the age of 89 after sixty years of service as a physician. He had actively practiced in Salt Lake City for fifty years and was known affectionately as the "Dean of Medicine" in Utah. •

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COLORADO WINTER CLINICS
of the Colorado Medical Society

February 28 through March 3, 1967
at the Brown Palace Hotel in Denver, Colorado

TUESDAY, FEBRUARY 28

"The Fetus; Erythroblastosis Fetalis, Pathogenesis, Treatment and Prevention"

ALVIN ZIPURSKY, M.D.
University of Manitoba
RICHARD BASHORE, M.D.
University of California Center for Health Sciences

WEDNESDAY, MARCH 1

Luncheon: "Government Medical Challenges"

MISS CHARLINE BIRKINS
Director of Colo. State Dept. of Public Welfare

"Surgery of the Heart"

ALBERT STARR, M.D.
Portland, Oregon

THURSDAY, MARCH 2

"The Airway"

ROY F. GODDARD, M.D.
Lovelace Foundation, Albuquerque

DAVID ALLAN, M.D.
Chicago Memorial Hospital

FRIDAY, MARCH 3

"Hypertension"

JEROME W. CONN, M.D.
University of Michigan Medical Center

RAY W. GIFFORD, JR.
The Cleveland Clinic

☆ ☆ ☆

DAILY—Yampa Valley Mail leaves Union Station for skiing at Winter Park
(Take the Medi-car on Wednesdays and Thursdays)
Scientific Movies
Scientific and Technical Exhibits
Colorado Sport, Boat and Travel Show at Coliseum
Receptions and dinner meetings of specialty organizations
Woman's Auxiliary activities
Feb. 28 and March 3 — Denver University Hockey

☆ ☆ ☆

The Colorado Nursing Association and the Colorado Medical Society will sponsor scientific meetings on obstetrics (Fitzsimons Hospital on February 28) and pediatrics (Children's Hospital on March 2) for nurses.

Meetings of the House of Delegates of the Society are scheduled for Tuesday and Friday mornings. All scientific programs will be held in the afternoons.

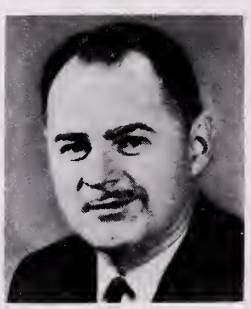
☆ ☆ ☆

Visiting guest speakers:

Richard A. Bashore, M.D.

Jerome W. Conn, M.D.

Ray W. Gifford, Jr., M.D.


Roy F. Goddard, M.D.

Albert Starr, M.D.

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AAGP credit available; Registration fee $10.00 Colorado M.D.'s; $20.00 out-of-Colorado Doctors; $5.00 for one afternoon.

Write Colorado Medical Society, 1809 East 18th Avenue, Denver, Colorado 80218, for complete program.

UTAH

USMA Briefs

Dr. Ernest L. Wilkinson, Salt Lake City internist, was recently elected to serve a three-year term on the board of directors of the American Heart Association. He has been a member of the Utah Heart Association since 1954, and served as president of that group during 1963-64.

* * *

Dr. Mark B. Jenson, Provo ophthalmologist, recently received a MEDICO Certificate of Appreciation for his work at the Beni Messous Hospital in Algiers, Algeria in 1965. Dr. Jenson spent a month at the hospital doing eye surgery under the MEDICO program which sends physicians, nurses and technicians to underprivileged areas of the world.

* * *

A Logan pediatrician, Dr. Paul R. Stowell, has been appointed to Utah's Advisory Committee for the eight-state project: Designing Education for the Future. Dr. Stowell is one of 15 representative Utahans who will advise on planning studies, analyzing data and developing recommendations for the statewide citizen's study on the improvements in Utah education to meet the anticipated changes in American society during the next 15 years.

* * *

Dr. Kathryn E. Brandon, director of the Weber County Health Department, was re-elected secretary and program chairman of the school health section during the recent convention of the American Public Health Association in San Francisco.

* * *

Dr. George W. J. Smith, Salt Lake City psychiatrist, has been awarded honorary life membership by the Utah Conference on Social Welfare "in recognition of his outstanding service and leadership to the people of the state of Utah in the field of Social Welfare." Dr. Smith is the first physician so honored by this agency. He was especially commended for his service to agencies and his multiple efforts in behalf of children and adolescents.

* * *

Two members of the Utah State Medical Association were successful in their bids for public office during the recent elections. Dr. G. Stanford Rees, Gunnison general practitioner, was re-elected to the State Senate from his district in Beaver, Millerd and Sanpete Counties. Dr. Richard A. Call, Provo pathologist, was elected also to the State Senate from his district in Provo. This was Dr. Call's first attempt at public office. Dr. Rees will be serving his second term.

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MEETINGS

Colorado Internists Schedule Scientific Meeting

The American College of Physicians (ACP) will hold a regional meeting January 27-28 for internal medicine specialists in Colorado at the Broadmoor Hotel in Colorado Springs, Colorado. The regional meeting is one of 30 scientific sessions sponsored each year by the ACP throughout the United States and Canada. It serves to help keep College members abreast of developments in the basic sciences and clinical medicine. The ACP represents some 13,000 specialists in internal medicine and related fields.

Special guest for the two-day meeting will be R. Carmichael Tilghman, MD, Baltimore, Md., ACP Regent and Associate Professor of Medicine at the Johns Hopkins University School of Medicine. The meeting is under the general direction of Charley J. Smyth, MD, Denver, ACP Governor for Colorado and Associate Professor of Internal Medicine at the University of Colorado School of Medicine.

Course in Electroencephalography

A continuation course in "Clinical Electroencephalography" will be conducted on June 5-7, 1967 in Philadelphia, Pennsylvania. This is the second course sponsored by the American EEG Society (aided by a grant from the Bureau of State Services, U.S.P.H.S.) and is designed for physicians who have had little or no formal EEG training. Inquiries about further details of the course and registration procedure should be addressed to Dr. Donald W. Klass, EEG Course Director, Mayo Clinic, Rochester, Minnesota.

Mid-Central States Orthopaedic Society

The 14th Annual Meeting of the Mid-Central States Orthopaedic Society will be held in Kansas City, Missouri, May 11-13, 1967, at the Sheraton-Prom Motel, Dr. Paul W. Meyer, President, presiding. Region VIII of the American Academy of Orthopaedic Surgeons has accepted an invitation to hold their general meeting in conjunction with that of the Mid-Central States group.

For further information, contact H. O. Marsh, M.D., Secretary, Mid-Central States Orthopaedic Society, 14 Douglas Parkway, Wichita, Kansas 67206.

American Cancer Society—Kansas Division

The 19th Annual Midwest Cancer Conference will be held at the Lassen Hotel in Wichita, Kansas, March 31 and April 1, 1967. The meeting is sponsored by the Medical-Scientific Committee of the American Cancer Society, Kansas Division, Inc. Dr. Jack Walker of the Kansas University Medical Center is in charge of the program.

The theme for the conference is "Cancer in Children" and several nationally known cancer specialists will present papers on leukemia and tumors of childhood, covering procedures and techniques of diagnosis, chemotherapy, radiology and surgery.

No registration fee; no advance registration necessary; AAGP credit allowed. For further information, write American Cancer Society, Kansas Division, Inc., 824 Tyler Street, Topeka, Kansas 66612.

Arthritis—Medical, Surgical and Pediatric

A symposium sponsored by the Southeastern Chapter of the Colorado Academy of General Practice will be held on Sunday, April 23, 1967 at the Ramada Inn in Pueblo, Colorado. An outline of the program is as follows:

"A Sound Approach to the Treatment of Rheumatoid Arthritis" and "Diagnosis and Treatment of Gout"—Norman O. Rothermich, M.D., Columbus, Ohio.

"Surgery of the Hand in Arthritis" and "Surgery of the Hip in Arthritis"—Lee J. Cordrey, M.D., Tampa, Florida.

"Arthritis in Childhood" and "Rheumatic Fever"—Edward A. Mortimer, M.D., Professor of Pediatrics at the University of New Mexico.

Colonel Wilfred McCormick, a noted author, will give the luncheon program on *Kit Carson.*

After the all-day meeting, a free cocktail party is scheduled for Sunday evening.

Obstetrical and Gynecological Forum

The Sixteenth Annual Obstetrical and Gynecological Forum will be held on Saturday and Sunday, February 11-12, 1967, at the Ambassador Hotel, Los Angeles. Sponsored by the Los Angeles Obstetrical and Gynecological Society, the Forum is designed primarily for younger specialists and general practitioners who emphasize obstetrics and gynecology to acquaint them with the latest developments in this specialty. Residents and interns are welcome to attend. This course has been accredited by the American Academy of General Practice for fifteen elective hours.

Regular registration fee is $30.00; special fee for residents and interns, $10.00. These fees include luncheons both days. Advance reservations, accompanied by check for the full fee, should be sent to the Los Angeles Obstetrical and Gynecological Society, 5410 Wilshire Boulevard, Los Angeles, California 90036, telephone (213) 934-1551.

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Influenza virus
Protein shell enclosing the core of nucleic acid (RNA)—artist's representation

The incidence of influenza A_2. In this country, where influenza is one of the leading causes of morbidity, influenza A_2 (Asian) continues to be a serious medical problem. In 1957 influenza A_2 was responsible for approximately 40,000 excess deaths in a three-month period. Since that year the most prevalent influenza virus has been A_2 (Asian).

What is Symmetrel®? "Symmetrel" (amantadine HCl) is a new synthetic chemical which acts as a molecular barrier to virus penetration. It provides for the first time specific oral medication for the prevention of respiratory infections caused by influenza A_2 (Asian) viruses—an entirely new approach in preventive medicine.

For prescribing information, see last page of this presentation

What Symmetrel® (amantadine HCl) means to you

...the first and only oral chemical agent to prevent influenza A_2 (Asian).

...not a vaccine or antibiotic, but a new synthetic chemical unrelated to any other chemotherapeutic agent.

...unique mode of action: prevents virus penetration of the host cell without affecting vital cell functions.

...specifically active against all influenza A_2 viruses tested to date.

...not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

...does not interfere with normal antibody response; acts in concert with pre-existing antibody.

What Symmetrel® means to your patient

...possible immediate influenza A_2 protection when taken following suspected contact.

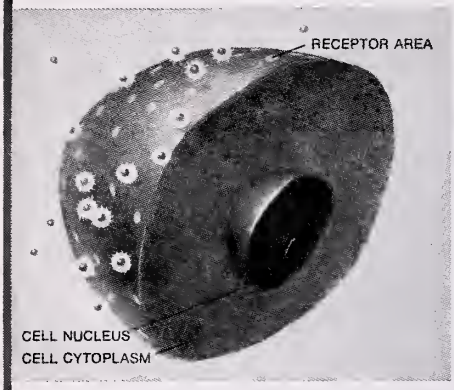
...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A_2 is especially hazardous.

...a high degree of safety in clinical use.

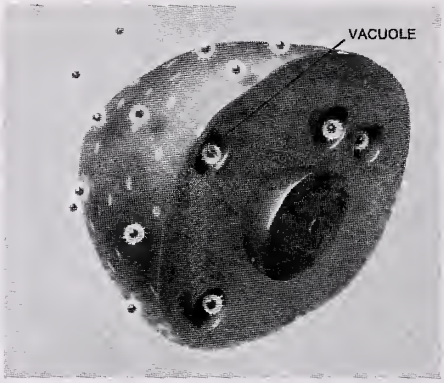
...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

How the influenza virus invades and destroys the untreated cell



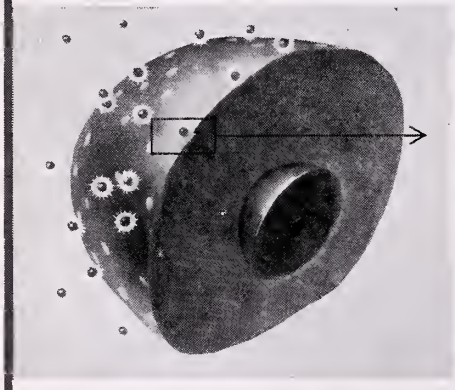
1 Viruses outside the cell attach themselves to specific cell receptor areas

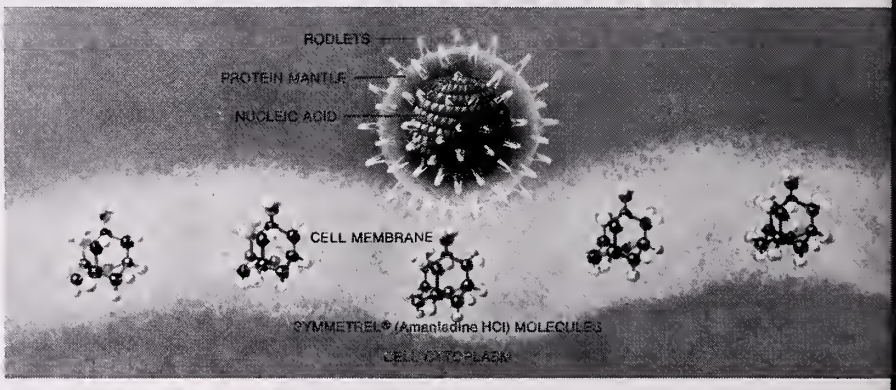


2 The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm

3 The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion[1]





Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

1. "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Haff, R. F.; and Goldsby, R. A., Journal of Bacteriology *90*,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A_2 in persons of all age groups. Early use is recommended, preferably before or as soon as possible after actual or suspected contact with individuals suffering from influenza A_2. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

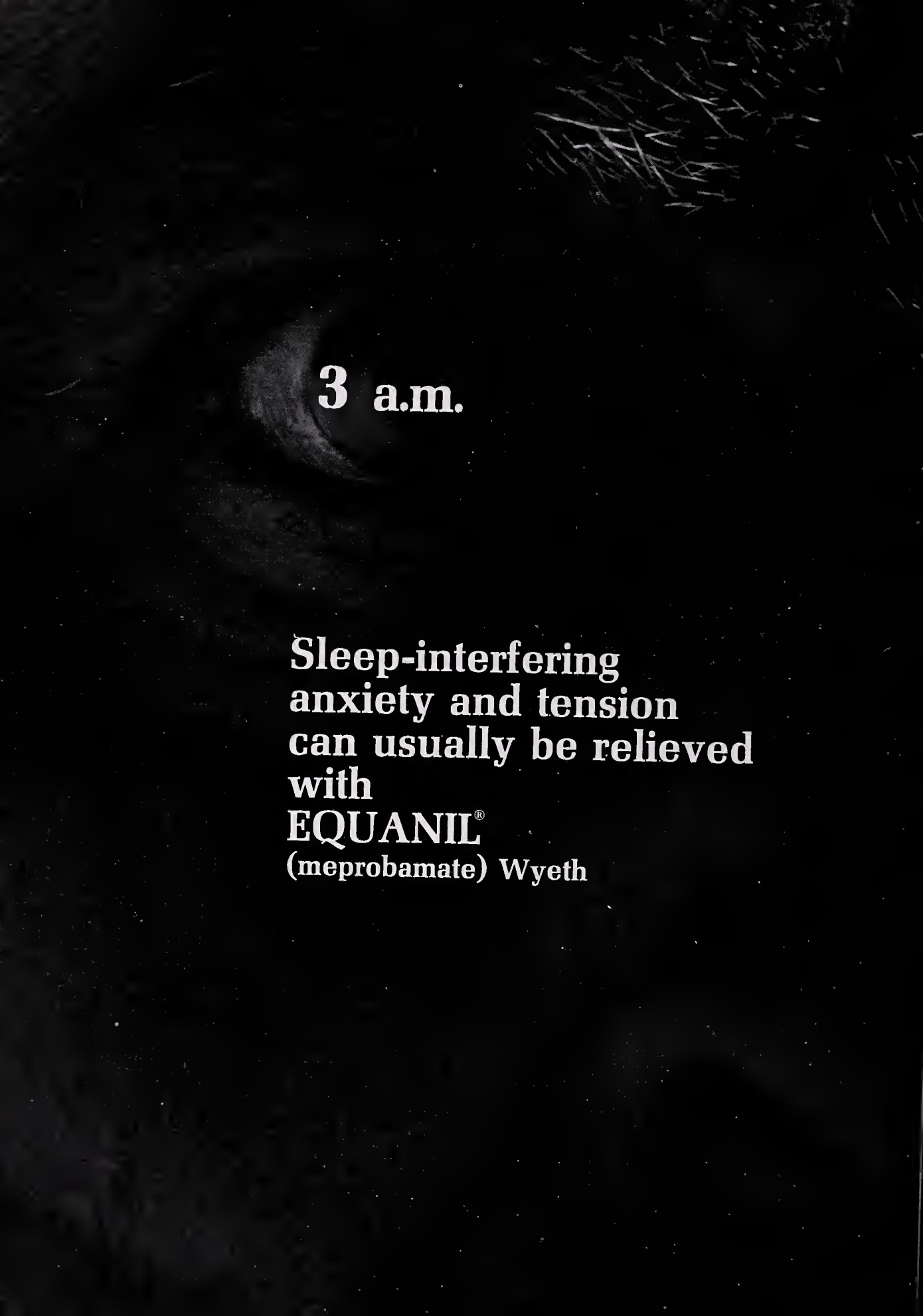
How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.
Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.

DUPONT

Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration


3 a.m.
Sleep-interfering
anxiety and tension
can usually be relieved
with
EQUANIL®
(meprobamate) Wyeth

Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

Wyeth Laboratories
Philadelphia, Pa.

Wyeth®
SERVICE TO MEDICINE

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

Dr. Joseph Butterfield, assistant clinical professor of pediatrics in the University of Colorado School of Medicine, is co-editor of a monograph, "Intrauterine Transfusion and Erythroblastosis Fetalis," newly published by the Ross Laboratories of Columbus, Ohio. Dr. Butterfield is director of the Newborn Center at Children's Hospital. He was a member of the full-time pediatric faculty of the C.U. medical school from 1960 to 1965 and has continued as a member of the volunteer faculty.

In addition to Dr. Butterfield, contributors to the 120-page monograph include the following members of the CU medical faculty: Dr. Frederick C. Battaglia, associate professor of pediatrics and obstetrics-gynecology; Dr. Watson A. Bowes, Jr., assistant professor of obstetrics and gynecology; Dr. Joseph V. Brazie, assistant professor of pediatrics; Dr. Paul D. Bruns, former professor of obstetrics and gynecology; Dr. Frank J. Cozzetto, associate clinical professor of pediatrics and medical director of Children's Hospital; Dr. John H. Githens, professor of pediatrics; and Dr. C. W. Reiquam, assistant clinical professor of pediatrics and pathologist at Children's Hospital.

* * *

Dr. Edward G. Billings, Denver psychiatrist and a volunteer member of the faculty of the University of Colorado School of Medicine, has been elected to a three-year term on the 16-member Medical Board of the University Hospitals. The board represents the volunteer and full-time physicians who serve as the staffs of Colorado General and Colorado Psychopathic Hospitals.

Dr. Billings is a diplomate of both the American Board of Psychiatry and Neurology and the American Board of Internal Medicine.

* * *

The Honors Achievement Award of the Angiology Research Foundation has been presented to a team of University of Colorado Medical Center investigators for their work in developing a "window" technique by which the living lung can be observed as it functions. The award was presented to Wiltz W. Wagner, Jr., research physiologist, and Dr. Giles F. Filley, associate professor of medicine in the CU School of Medicine, for the lung observation studies undertaken in the Cardiovascular Pulmonary Laboratory at the CU Medical Center. The investigations of Mr. Wagner and Dr. Filley and their associates have been supported by grants from the U. S. Public Health Service, the Colorado Heart Assn. and the National Science Foundation.

Also recognized in the presentation were four consultants who assisted the research team with their project: Michael Bustin, a research technician; James Kottenstette, an engineer; James Donaldson, a plastics expert; and Edwin Licht, a microscopist.

* * *

The $1-million Eleanor Roosevelt Institute for Cancer Research at the University of Colorado Medical Center was formally dedicated in ceremonies December 3.

Plans for the dedication were announced in New York City by Matthew B. Rosenhaus, chairman of the board of the Eleanor Roosevelt Cancer Foundation, which established the institute in 1961. The institute's director is Dr. Theodore T. Puck, professor and chairman of the Department of Biophysics of the C.U. School of Medicine, who earlier in the week was appointed a lifetime research professor of the American Cancer Society.

The institute and its staff are embarked upon a program of basic cellular and molecular research into the genesis of cancer and discovering differences in behavior between normal and malignant cells.

The Eleanor Roosevelt Cancer Foundation, the only organization to which Mrs. Roosevelt gave her name during her lifetime, established the institute at the C.U. Medical Center with an initial grant of funds in 1961. Several additional grants completed funding for construction of the institute's facilities at a cost of nearly $1 million.

The foundation also is the originator of the Eleanor Roosevelt International Fellowship Program for Cancer Research, now a part of the American Cancer Society's international activities. The foundation supplied funds which helped to establish other cancer research institutes at the University of Utah and Jefferson Medical College in Philadelphia.

* * *

Dr. Roger S. Mitchell, director of the Webb-Waring Institute for Medical Research at the University of Colorado Medical Center, has been appointed to a new commission of the National Tuberculosis Association designed to serve as a focal point for citizen action in the campaign for clean air. The new national group has been named the National Air Conservation Commission.

A distinguished authority in the field of respiratory diseases, Dr. Mitchell is an associate professor of medicine in the CU School of Medicine and serves as head of its Division of Pulmonary Diseases.

* * *

Dr. Theodore T. Puck has been appointed American Cancer Society Research Professor of Biophysics in the University of Colorado School of Medicine. Dr. Puck, who has been professor and chairman of the CU Department of Biophysics since 1948, becomes the twenty-third lifetime research professor sponsored by the ACS. He also serves as director of the Eleanor Roosevelt Institute for Cancer Research, established in 1961 and formally dedicated in ceremonies on Dec. 3.

University of Utah College of Medicine

Dr. Louis S. Goodman, professor and head of the Department of Pharmacology, University of Utah College of Medicine, has been appointed a member of the National Advisory Council on Health Research Facilities of the U. S. Public Health Service. As a member of the Council, Dr. Goodman will participate in determination of how Federal funds for construction of medical research facilities will be expended. He was invited to serve on the Council by Surgeon General William H. Stewart.

Dr. Goodman has also been appointed as a consultant to the National Institute of General Medical Sciences of the National Institutes of Health.

* * *

A test is now being given at the University of Utah Hospital which will avoid or sharply reduce speech and hearing problems among very young children.

Under the supervision of Dr. David A. Dolowitz, all newborn babies at the University Hospital are now being tested with a "Newborn Audiometer" which indicates the infants' hearing level.

There is a great advantage to the discovery of defective hearing as early as possible. An infant with undetected hearing loss has great difficulty in learning to talk. Such children in the past have frequently been considered to be mentally retarded because they do not react normally. These tests should eliminate this type of problem in the future.

* * *

Dr. Maxwell M. Wintrobe of the University of Utah Medical Center has been appointed to the National Advisory Allergy and Infectious Diseases Council to serve a 4-year term beginning February 1, 1967. Dr. Wintrobe is professor and head of the department of internal medicine at the University of Utah Medical Center, Salt Lake City.

Dr. Wintrobe, whose research interests include hematology, clinical and experimental nutrition, leukemia and related neoplastic diseases, has held his present position at the University of Utah since 1943 and has been director of the laboratory study of hereditary and metabolic disorders there since 1945. An international authority in the field of hematology, he is a corresponding member of several European societies, a fellow of the American College of Physicians, and a diplomate of the American Board of Internal Medicine.

Dr. Wintrobe, a native of Canada, received A.B., M.D., B.S., and honorary Sc.D. degrees from the University of Manitoba, and a Ph.D. degree in internal medicine from Tulane University. Before going to the University of Utah, he taught at Tulane and Johns Hopkins Universities and was a physician at Johns Hopkins Hospital from 1930 to 1943.

* * *

In a surprise announcement in New York City December 1, the Department of Pharmacology at the University of Utah College of Medicine was named recipient of the first Lennox Award of the American Epilepsy Society, for the year 1966.

The award carries a cash gift of $1,000 for the Department, and is presented in the name of the late, famed Dr. W. G. Lennox of Harvard Medical School, considered the world leader in the study of epilepsy until his death in 1960.

Dr. Dixon Woodbury presented, on special invitation, the fourth annual W. G. Lennox Memorial Lecture of the Society, also receiving an award of $1,000 as an honorarium.

College Fellowship Program

The American College of Chest Physicians in an effort to advance knowledge of chest diseases and their treatment in other countries has established a Resident Fellowship Program through which medical graduates from other countries can receive assistance in taking postgraduate medical training in chest diseases in the United States or in any country other than their own.

The following fellowships are being offered by the College at this time:

Eudowood Fellowship for Tuberculosis with a grant of $2,500.00 per year for postgraduate training in the United States in tuberculosis. Candidates must hold a standard ECFMG certificate.

Li Shu Fan Fellowship for Postgraduate Study in Chest Disease appropriates $1,200.00 annually for a twelve month period of postgraduate study in any country other than that of the candidate. If the postgraduate training is taken in the United States, the standard ECFMG certificate would be required.

Physicians who are interested in the above fellowships should contact Dr. Andrew L. Banyai, Chairman of the Council on International Affairs, at the Executive Offices of the American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois 60611, USA, for application forms.

George Washington told the truth (as usual)

"My manner of living is plain and I do not mean to be put out of it. A glass of wine and a bit of mutton are always ready, and such as are content to partake of that are always welcome."

DEAR DOCTOR:

George Washington told the truth (as usual) about cherry trees and wine. He liked wine, as you see above. He hoped his guests would like it, too. And his wife Martha (a famous cook—do you know her book?) liked it, too.

So we do not hesitate, Doctor, to recommend California wines in the diets of yourself and many of your patients. As you know, they provide antibacterial pigments, Vitamin B, amino acids, iron, sugars, polyphenols, and just plain pleasure. We believe that pleasure, for someone in your demanding profession, is very important. Here's to *your* pleasure and health, as well as that of your patients!

We'd like very much to send you (at the drop of a note on your letterhead) two most interesting free booklets: "WINE COOKERY—THE EASY WAY," which will make a kitten of your wife and a barbecue lion of yourself; and "USES OF WINE IN MEDICAL PRACTICE," newly revised, 64 pages, which summarizes a quarter of a century of scientific research on wine and its relation to your patients' well-being. We are quite sure you will find it useful.

Will you drop us a note? You'll receive both booklets free. Here's to your health again, Doctor, with wine!

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winter 1966

DORSEY Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska. Address communications to Raymond C. Pogge, M.D., Director of Medicine.

this issue: the nose as a shock organ

the nose as a shock organ

by Charles J. Shagoury, M.D., Chelmsford, Massachusetts

"Is it a cold, hay fever, or has he been reprimanded by his boss?" Occasionally, you will ask yourself this question when confronted by a patient with abrupt onset of rhinorrhea, nasal obstruction, and sneezing. Usually the history will elucidate the problem, but examination of the nose will often provide valuable clues to the correct diagnosis.

The nose is a shock organ in a double sense. First, it is in the nose that the confrontation takes place with the surrounding atmosphere. For twenty-four hours a day, the nose must meet the varying challenges of the inspired air, containing perhaps noxious chemicals, dust, dirt, bacteria, viruses, fungi, and industrial pollutants of all kinds, and render it clean, virtually sterile, and fit for the sensitive alveoli of the lungs. Whatever the temperature or humidity of the atmosphere, the nose must transmit it to the lungs at approximately 98°F, and with a humidity of approximately 40%.[1]

Second, in particularly susceptible patients, the nose acts as a shock organ in a manner totally unrelated to its normal function. Persons with hay fever respond to ordinarily harmless materials by extreme nasal congestion, with marked rhinorrhea and violent spasms of sneezing. In some patients, exposure to threatening or disagreeable agents, or situations involving mental conflict may result in a reaction which is exclusively nasal, with swelling of the turbinates, and marked hypersecretion.[2]

Nasal symptoms usually result when the nose seeks to perform its function of getting rid of noxious and dangerous elements in the atmosphere, and prevent their admission to the trachea and lungs. Small particles are removed by the mucous coating which blankets the nasal passages. This mucous blanket contains a bacteriostatic agent, lysozyme, which destroys most air-borne bacteria.[3] The mucinous content renders the surface sticky, causing dusts and small particles to adhere. It has been postulated that this process is rendered more effective through adsorption because of a surface electrical charge on the nasal mucosa.[4] The cilia then sweep the particulate matter to the pharynx. The nose can prevent entrance into the lungs of particles as small as three microns in diameter, but smaller particles elude the nasal barrier. Most bacteria causing respiratory infections are one to three microns in diameter, but since they usually are inhaled in clumps, they are efficiently removed as a rule. Viruses, which are of the order of 1/1000 of this size, are less efficiently dealt with, unless they occur in very large aggregates.[5]

The nose will react in a more or less similar manner, whatever the nature of the offending agent, whether it be an irritant chemical, virus, pollen, or distasteful emotional situation. In acute coryza, the most characteristic sign is a profuse watery discharge. The volume of secretion may rise from practically nothing to nearly 60cc in twenty-four hours.[6] The mucous membrane is reddened and engorged, while the turbinates are markedly swollen. After the first day or two, the secretion becomes thicker, yellowish, and more difficult to expel. The surface cells are largely destroyed, contributing to the copious discharge, which now also contains numerous inflammatory cells which have migrated to the area. Gradually, over a period of a few days, or a week, the flood abates, the swelling and redness subside, and the nasal epithelium resumes a healthy appearance.

Repeated attacks of rhinitis, particularly if there is an underlying element of obstruction, may result in chronic rhinitis. The mucous membrane is constantly swollen and reddened. Sticky, mucopurulent secretions are a continuous feature, and the glandular elements are hypertrophied. Commonly, the mucosal surface takes on an irregular, rounded "mulberry" appearance, and nasal passages are occluded by the swollen turbinates and redundant mucosa.

While all of us are susceptible to colds, the victim of hay fever, or allergic rhinitis, displays a marked nasal reaction to materials in the air which leave his associates unaffected. In such a patient, the nasal mucosa has become an allergic "shock" organ. Contact with the nasal allergen causes local release of histamine, with vasodilatation, increased vascular permeability, and severe nasal congestion, similar to the "wheal" and "flare" reactions in the skin, when the epidermis is the allergic shock organ. While we eagerly await the coming of spring, the hay fever sufferer dreads the blooming season, whose invisible pollens are poisons to his sensitive nose. His neighbor's cat or dog may provoke paroxysms of uncontrollable sneezing. In some cases a specific allergen is not identified, but the triad of rhinorrhea, nasal obstruction, and sneezing is present.[7] The nose in these cases shows a pale, boggy, edematous mucosa, with a thin mucoid secretion. The mucous membrane shows extreme retractility to 1% cocaine or ephedrine. If the patient has medicated himself prior to examination, the nasal passages may appear abnormally patent, or show exaggerated congestion due to rebound reaction. The secretion may show a large number of eosinophils particularly after an attack of sneezing or rhinorrhea. Touching the mucosal surface, especially of the inferior turbinate, leaves an indentation, showing that the swelling is due to stasis and edema, rather than actual hyperplasia of the mucous membrane as in chronic hypertrophic rhinitis. Though the pale swollen mucosa is the hallmark of allergic rhinitis, as usually seen by the physician, exposure of allergic subjects to their known allergens results in a brief hyperemic phase, followed by pallor and edema.[8]

In the later stages of allergic rhinitis, the chronic edema of the mucous membrane results in the formation of polyps, clusters of grape-like masses hanging from the roof of the nose, with a pale glistening surface, contributing significantly to the sense of nasal obstruction and oppression.

A large group of patients show symptoms of nasal congestion when confronted by adverse life situations.[9] In these unfortunate persons, anxiety, frustration, and resentment are often accompanied by a runny nose and nasal obstruction. Lacrimation adds to the nasal stuffiness. This autonomic response, mediated by the parasympathetic nervous system, may be part of a general parasympathetic reaction, or may possibly represent in part, a symbolic effort to wash out and crowd out the offending situation.

Nasal congestion may also occur in some patients at times of sexual stimulation, and in women during menstruation and pregnancy, even to the point of epistaxis.[10] The relationship is obscure; castration results in atrophy of the nasal glands, and their action is inhibited by the hormones of the hypophysis and the thyroid.[11] The nose may be the shock organ in drug therapy. The nose may also bear the brunt of industrial stress, in those who work in a hot dry atmosphere, or those exposed to acid fumes, or irritating dusts. As the air in our cities is increasingly polluted by exhaust fumes, and industrial irritants, whole urban populations may suffer from chronic nasal and respiratory symptoms.

Of course, nasal reactions are not just infectious, or allergic, or emotional. Particularly in the chronic sufferers, there is an interdependence of all three. Death of a relative, or other psychic shock can pre-

(concluded on following page)

it's a comforting thing to know

For postnasal drip, clogged ears and stuffed and runny noses

Triaminic® timed-release tablets

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

keep patients comfortable 'round the clock. 24-hour decongestion on just a single tablet dosed morning, mid-afternoon and at bedtime. Patients regain senses and can breathe, smell and taste again.

Triaminic. Isn't that a comforting thing to know?

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

(Advertisement)

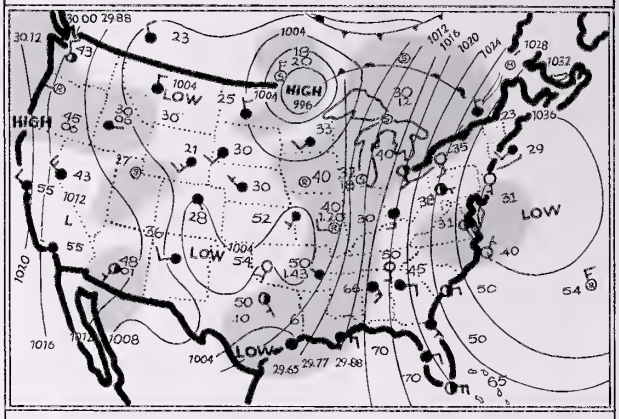
cipitate an attack of rhinorrhea in hay fever sufferers.[12] Others develop attacks of vasomotor rhinitis following change in temperature, chilling, or exposure to the sun, or simply warm bedclothes.

The complex interplay of allergy and infection is largely unclear. Allergy to the viruses and bacteria which cause infection has been postulated, but is difficult to demonstrate. The swollen obstructed allergic nose is more susceptible to infection. At the same time, infection often precedes or precipitates an allergic attack. Exposure of a susceptible patient to an allergen can activate latent virus organisms leading to infection.[13] This "jolt" reaction represents a summation of an allergen and a virus leading to symptoms in the nose as a shock organ, which neither could have produced alone. In childhood, repeated attacks of bronchitis and colds may be inflammatory reactions to an allergen, or precipitated by exposure to an allergen. These children may later develop typical allergic rhinitis. On the other hand, children with typical allergic histories, eczema, asthma, and allergic familial backgrounds, may later develop typical infectious rhinopathies. Skin tests in such patients are usually positive.

Nasal reactions are part of the systemic response of the patient to an unwelcome stimulus. In cases of respiratory infection and exposure to atmospheric irritants, the reactions are useful, and to some extent desirable. They are usually self-limited, disappearing within a few days, or upon removal of the provoking agent. Here the distressing symptoms can be ameliorated with appropriate decongestant agents, or, in the case of severe or complicated respiratory infections,antibiotics may be given, with reasonable confidence of a cure. On the other hand, when nasal reactions are the peculiar response of an individual to an allergen, or to an undesirable situation, they serve no useful purpose. The nose here is a shock organ in a stressful situation, but can furnish no response of value. It merely causes the patient symptoms which add to his problems. In these cases, symptomatic treatment is of great benefit, but often the underlying faulty pattern of response cannot be altered. Such a patient may literally be considered to be paying his way in life "through the nose."

References 1. Maures, E. R., Mendez, F. C., Jr., and Hilsinger, R. C.: Importance of the Nose in Filtering and Humidifying Inspired Air. Ohio State Med. J. 61:41-42. 2. Holmes, T.,Goodell H., Wolf, S., and Wolff, H. G.: The Nose. Springfield, Ill. 1950 Charles C. Thomas p. 10 ff. 3. Boies, L. H. R.: Fundamentals of Otolaryngology. Phila. W. B. Saunders Co. 1954 p. 160. 4. Proetz, A. W.: Applied Physiology of the Nose. St. Louis 1941 Zimmerman-Petty Co. p. 6. 5. Spikard, A.: The Common Cold, A Survey. Disease of the Chest 48:545-49. Nov. 1965. 6. Ibid. 7. Bourdial, J.:Role of Allergy in Upper Respiratory Tract Infection. Europa Med. Paris 4:75-80 1965. 8. Holmes, et al. The Nose p. 22. 9. Ibid. p. 320. 10. Proetz, A. W. op. cit. p. 321. 11. Ibid. p. 320. 12. Rees, Linford J.: Physiogenic and Psychogenic Factors in Vasomotor Rhinitis. J. Psychosomatic Research 8:101 Sept. 1964. 13. Horesh, A. J.: Allergy and Infection. An Allergy 23:621-35 Dec. 1965.

Weather Forecast Throughout the Nation



RAIN TURNING TO SNOW, INCREASING WINDS AND DROPPING TEMPERATURES FOLLOWED BY COUGH, CONGESTION AND PAIN

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Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: Patient should not drive a car or operate dangerous machinery if drowsiness occurs. Except under professional care, do not give to patients under 12 yrs. or those who have persistent cough, high fever, heart or thyroid disease, hypertension or diabetes or use for more than 10 days.

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PHARMACOLOGY: Triaminic decongests and promotes drainage of nasal and paranasal passages, and prevents any further histamine-induced damage; the triple sulfonamides inhibit susceptible bacterial invaders. INDICATIONS: For congestion and infection of the upper respiratory tract caused by sulfa-susceptible organisms. DOSAGE: Adults: 2 to 4 tablets initially, followed by 2 tablets every 6 hours. Medication should be continued until patient has been afebrile for 3 days. ADVANTAGES: The advantages of Trisulfaminic in upper respiratory infections are: freedom from narcotics or alcohol; therapeutic reliability; safety; economy; ease of administration; freedom from potential sensitization to broad-spectrum antibiotics which may be reserved for lower respiratory or other infections caused by susceptible organisms. CONTRAINDICATIONS: Contraindicated in sulfonamide and antihistamine sensitivity, impaired renal function, pregnancy approaching term, and in premature infants and newborn infants during the first month of life. Do not use in patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal or bladder neck obstruction. WARNING: Use only after careful evaluation in patients with liver or renal damage, urinary obstruction, or blood dyscrasias. Deaths have been reported from hypersensitivity reactions with administration of sulfonamides. In intermittent or prolonged therapy, blood counts and liver and kidney function tests should be performed periodically. Sulfonamide therapy may potentiate the hypoglycemic action of sulfonylureas. PRECAUTIONS: Use with caution in patients with histories of significant allergy or asthma. Assure an adequate fluid intake. Because the antihistamines may cause drowsiness of varying degree, warn patients about activities requiring alertness such as driving a car or operating dangerous machinery. Use with caution in the presence of hypertension, hyperthyroidism, cardiovascular disease and diabetes. ADVERSE REACTIONS: As in all sulfonamide therapy, the following reactions may occur: headache, nausea, vomiting, diarrhea, icterus, hepatitis, pancreatitis, urticaria, rash, fever, cyanosis, hematuria, crystalluria, proteinuria, blood dyscrasias, petechiae, purpura, neuropathy and injection of the conjunctiva and sclera. If one or more of these reactions occur, the drug should be discontinued. With antihistaminic therapy there have been reports of sedation varying from mild drowsiness to deep sleep, dizziness, lassitude, inability to concentrate, fatigue, incoordination, tinnitus, blurred vision, diplopia, euphoria, nervousness, insomnia, tremors, palpitation, hypotension, headache, chest tightness, urinary frequency, dysuria, tingling of the hands, dryness of the mouth, throat, and nose, gastrointestinal disturbances such as epigastric distress, anorexia, nausea, vomiting, constipation and diarrhea and very rarely, leukopenia and agranulocytosis. Adverse reactions reported with the use of sympathomimetic amines include anxiety, tension, restlessness, nervousness, tremor, weakness, insomnia, headache, palpitation, tachycardia, angina, elevation of blood pressure, sweating, mydriasis, anorexia, nausea, vomiting, dizziness, constipation, and dysuria due to vesicle sphincter spasm. PACKAGE INFORMATION: Trisulfaminic Tablets: Supplied in bottles of 100 tablets. CAUTION: Federal law prohibits dispensing without prescription.

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New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Addresses on Psycho-analysis: By J. J. Putnam. London, 1921, Hogarth Press. 470 p. Price: $5.00.

Biomechanics and Related Bio-engineering Topics: Edited by R. M. Kenedi. Oxford, 1965, Pergamon. 493 p. Price: $20.00.

Brief Separations: By Christoph Heinicke. N. Y., 1965, International Univ. Pr. 355 p. Price: $8.50.

Cellular Concepts in Rheumatoid Arthritis: Edited by Charles A. L. Stephens, Jr. Springfield, Ill., 1966, Thomas. 212 p. Price: $14.75.

Clinical Management of Behavior Disorders in Children: By Harry Bakwin. 3d ed. Phila., 1966, Saunders. 652 p. Price: $14.50.

Color Atlas of Dermatology: By Joseph Kimmig. 3d ed. Phila., 1965, Saunders. 304 p. Price: $45.00.

The Consumers Union Report on Family Planning: 2d ed. Mount Vernon, N. Y., 1966, Consumers Union of U. S. 191 p. Price: $1.75.

Cross-cultural Studies in Mental Health: Edited by Kenneth Soddy. London, 1961, Tavistock. 271 p. Price: $5.50.

Cunningham's Manual of Practical Anatomy. v. 1, Upper and Lower Limbs: Revised by G. J. Romanes. 13th ed. London, New York, 1966, Oxford Univ. Pr. 256 p. Price: $5.75.

The Current Status of Intensive Coronary Care: A Symposium presented by the American College of Cardiology and Presbyterian-University of Pennsylvania Medical Center. N. Y., 1966, Charles Press. 88 p. Price: $3.00.

Deviant Children Grown Up: By Lee N. Robins. Balt., 1966, Williams & Wilkins. 351 p. Price: $11.50.

Dream Analysis: By Ella Freeman Sharpe. London, 1937, Hogarth Press. 211 p. Price: $5.00.

The Ethics of Psychoanalysis: By Thomas S. Szasz. N. Y., 1965, Basic Books. 226 p. Price: $5.50.

The Family and Human Adaptation: By Thoedore Lidz. N. Y., 1963, International Univ. Pr. 120 p. Price: $3.00.

Games People Play: By Eric Berne. N. Y., 1964, Grove Press. 192 p. Price: $5.00.

Geriatric Psychiatry: Edited by Martin A. Berezin. N. Y., 1965, International Univ. Pr. 380 p. Price: $7.50.

Gray's Anatomy of the Human Body: Edited by Charles M. Goss. 28th ed. Phila., 1966, Lea & Febiger. 1448 p. Price: $22.50.

Handbook of Poisoning: By Robert H. Dreisbach. 5th ed. Los Altos, Calif., 1966, Lange. 483 p. Price: $5.00.

Handbook of Physiology: Section III: Respiration: Edited by Wallace O. Fenn. Washington, D. C., 1964-65, American Physiological Society. 2 v. Price: $60.00.

Homosexuality; Its Cause and Cure: By Albert Ellis. N. Y., 1965, Lyle Stuart. 288 p. Price: $7.95.

Human Development: Edited by Frank Falkner. Phila., 1966, Saunders. 644 p. Price: $20.00.

Impotence and Frigidity: By Edwin W. Hirsch. N. Y., 1966, Citadel. 284 p. Price: $5.95.

Interpersonal Perception: By Ronald D. Laing. N. Y., 1966, Springer. 179 p. Price: $4.75.

Introduction to Developmental Psychiatry: By Beulah C. Bosselman. Springfield, Ill., 1965, Thomas. 139 p. Price: $6.50.

The Juvenile Homosexual Experience: By Robert H. V. Ollendorff. N. Y., 1966, Julian Press. 245 p. Price: $7.00.

Leonardo da Vinci: Psychoanalytic Notes on the Enigma: By K. R. Eissler. N. Y., 1961, International Univ. Pr. 375 p. Price: $12.50.

A Manual of Tropical Medicine: By George W. Hunter. 4th ed. Phila., 1966, Saunders. 931 p. Price: $18.50.

Mechanisms and Therapy of Cardiac Arrhythmias: Edited by Leonard S. Dreifus. N. Y., 1966, Grune. 704 p. Price: $23.00.

The Nails In Disease: By Peter D. Samman. Springfield, Ill., 1965, Thomas. 130 p. Price: $8.50.

Personality, Social Class, and Delinquency: By John J. Conger. N. Y., 1966, Wiley. 249 p. Price $7.95.

The Psychotherapies of Marital Disharmony: Edited by Bernard L. Greene. N. Y., 1965, Free Press. 191 p. Price: $7.95.

Psychotherapy and the Behavioral Sciences: By Lewis R. Wolberg. N. Y., 1966, Grune. 198 p. Price: $6.75.

A Primer of Electrocardiography: By George E. Burch. 5th ed. Phila., 1966, Lea & Febiger. 304 p. Price: $6.50.

Principles of Group Treatment: By Eric Berne. N. Y., 1966, Oxford Univ. Pr. 379 p. Price: $6.50.

The Psychiatric Emergency: By Raymond M. Glasscote. Washington, 1966, American Psychiatric Assoc. 111 p. Price: $2.50.

Psychotherapy, Confidentiality, and Privilege Communication: By Ralph Slovenko. Springfield, Ill., 1966, Thomas. 202 p. Price: $8.00.

Pulmonary Embolism: By Frank D. Gray, Jr. Phila., 1966, Lea & Febiger. 234 p. Price: $8.50.

Radiology in World War II: Medical Dept. U. S. Army. Edited by Arnold Ahnfeldt. Washington, 1966, Office of the Surgeon General. 1087 p. Price: Gift.

Schizophrenia and the Family: By Theodore Lidz. N. Y., 1965, International Univ. Pr. 477 p. Price: $10.00.

The Search for Authenticity: By J. F. T. Bugental. N. Y., 1965, Holt, Rinehart and Winston. 437 p. Price: $8.95.

Sex Without Guilt: By Albert Ellis. Rev. ed. N. Y., 1966, Lyle Stuart. 192 p. Price: $4.95.

Studies of Troublesome Children: By Denis Herbert Stott. N. Y., 1966, Humanities. 208 p. Price: $5.50.

Synopsis of Dermatology: By William D. Stewart. St. Louis, 1966, Mosby. 664 p. Price: $10.85.

Transactional Analysis in Psychotherapy: By Eric Berne. N. Y., 1961, Grove. 270 p. Price: $3.95.

The Transsexual Phenomenon: By Harry Benjamin. N. Y., 1966, Julian Press. 286 p. Price: $8.50.

Trends in Psycho-analysis: By Marjorie Brierley. London, 1951, Hogarth Press. 320 p. Price: $3.75.

Uterosalpingography in Gynecology: By Samuel Rozin. Springfield, Ill., 1965, Thomas. 366 p. Price: $20.50.

The Wild Analyst; The Life and Work of Georg Groddeck: By Carl M. Grossman. N. Y., 1965, G. Braziller. 222 p. Price: $5.00.

Book Reviews

Caring for the Aged: By Bertram B. Moss with Fraser Kent. Garden City, N. Y., 1966, Doubleday. 372 p. Review.

This book fills a need. It comes close to being a "Dr. Spock" type of comprehensive layman's guide to problems of the aged. The book is directed at the family of the aging person.

In clear language, Dr. Moss presents a sensible, practical and obviously experienced discussion of financial, family, emotional, legal and physical problems faced by every family that has a genuine concern for their elder members.

Donald P. Anderson, MD

Atlas of Hernia Repair: By Carl H. Calman. St. Louis, 1966, Mosby. 159 p. Price: $16.75.

It is really quite difficult to say anything new or different about hernias or hernia repair. This atlas, though not offering any new theories or surgical approaches, does give a clear and concise view of the entire subject. The layout is attractive with numerous illustrations—all of which contribute to the ease of understanding a subject that often can be quite confusing. The descriptions of a sliding hernia repair and the preperitoneal approach are particularly well laid out.

This atlas should prove to be a valuable asset to the first and second year surgical resident who is perfecting his knowledge of the anatomical structures in this area and mastering the repair of a difficult hernia. It will prove equally valuable to the accomplished surgeon who infrequently runs into the rare or extremely difficult hernia.

John Q. Gallagher, MD

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Versatility—The therapeutic efficiency, safety and convenience of Lomotil may be used to advantage alone or adjunctively in diarrhea associated with:

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- **Acute infections**
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Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are:

Children: Total Daily Dosage

3-6 mo. . .	½ tsp.* t.i.d. (3 mg.)
6-12 mo. .	½ tsp.* q.i.d. (4 mg.)
1-2 yr. . . .	½ tsp. 5 times daily (5 mg.)
2-5 yr. . . .	1 tsp. t.i.d. (6 mg.)
5-8 yr. . . .	1 tsp. q.i.d. (8 mg.)
8-12 yr. . .	1 tsp. 5 times daily (10 mg.)
Adults: . .	2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per teaspoonful.

Maintenance dosage may be as low as one-fourth the initial daily dosage.

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Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

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In Neo-Synalar, fluocinoline acetonide controls the inflammation and provides rapid relief from associated pruritus. At the same time, its antibacterial component—neomycin—combats superficial infection caused by many gram-positive and gram-negative bacilli[2] that often colonize and thrive on abraded skin.[1]

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controls the infection

stops the scratch

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of its components. **Precautions:** Neomycin rarely produces allergic reactions. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. **Side Effects:** Side effects are not ordinarily encountered with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Neo-Synalar under certain conditions. **Availability:** Neo-Synalar Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

References: 1. Pillsbury, D. M., Shelley, W. B., and Kligman, A. M.: A manual of cutaneous medicine, Philadelphia, Saunders, 1961, p. 79. **2.** Barber, M., and Garrod, L. P.: Antibiotic and chemotherapy, Baltimore, Williams and Wilkins, 1963, p. 111.

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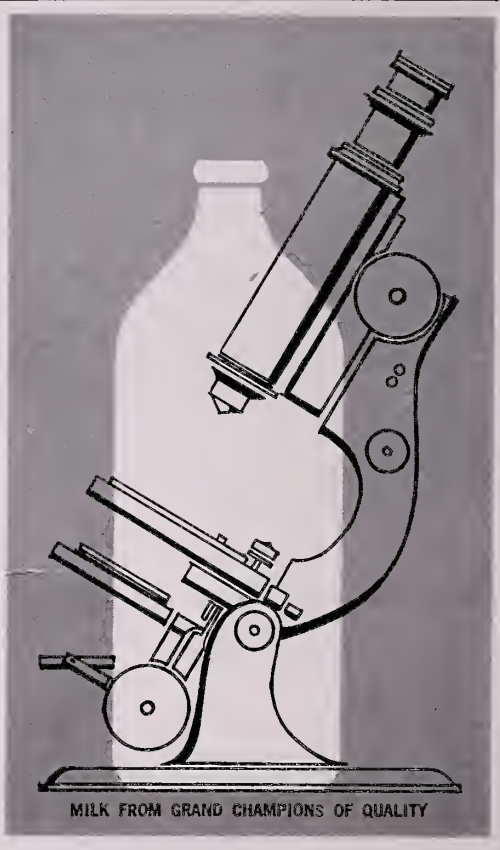

OBITUARIES

Colorado

Dr. Glenn O. Giffin died suddenly and unexpectedly apparently as a result of a heart attack on Sunday, November 20, 1966. He was 66 years old.

Dr. Giffin was born in McPherson, Kansas, on September 20, 1900, to William Watson and Mary Knightly Giffin. He was educated in the public schools of McPherson, Kansas, and the University of Kansas, where he graduated with an A.B. degree in 1925. Later he attended the University of Kansas Medical Center, and graduated from that institution with an M.D. degree in 1934.

Dr. Giffin was a veteran of both World War I and World War II, having served with the U. S. Navy from 1917-1919 and with the U. S. Army as a Captain from 1942-1945. He was awarded the Purple Heart decoration during World War II after being seriously wounded during the Anzio Beachhead action.

Following his discharge from the Army Dr. Giffin practiced medicine at Littleton, Colorado, until 1946, at which time he accepted a position on the medical staff of the Student Health Service at the University of Colorado. He was a staff member for the Student Health Service from May 1, 1946 until his retirement on June 30, 1966.

During his period of service with the Wardenburg Student Health Center, Dr. Giffin became the friend and counsellor of hundreds of Colorado University students. For a period of ten years he served as team physician for the athletic department of the university.

He was a member of the Boulder County, the Colorado State, and the American Medical Associations. He was also a member of the Boulder Rotary Club, the Boulder Country Club, and St. John's Episcopal Church of Boulder.

He is survived by his wife, E. Louise Giffin, a son, Glenn Giffin, a student at the University of Southern California on a Rockefeller Foundation Fellowship for graduate training in music, and a daughter, Mrs. David (Elaine) Lunsford, of Huntsville, Alabama.

He is also survived by three sisters, Mrs. Nora McFee of Kansas City, Missouri, Mrs. Sarah Whitney of Emporia, Kansas, and Mrs. Inez Pall of Weskan, Kansas, and two grandchildren.

Dr. Robert Marsh died suddenly and tragically on Wednesday, November 9, when his light plane crashed shortly after taking off from the airport at Lamar, Colorado.

Dr. Marsh was born October 2, 1923, at Mt. View, California. He received his MD degree from New York Medical College in 1949. He interned at the New York Receiving Hospital in New York City from 1949-1950. Later he served a residency in pathology from 1951-1954 at Kern General Hospital in Bakersfield, California. He was a clinical fellow in pathology at the Frances Delafield Hospital in New York City in 1954. He served as Captain in the U. S. Armed Forces from 1954-1956 with the 3750th USAF Hospital at Sheppard AFB in Texas. He was licensed to practice medicine in Colorado in 1958.

He has been an active member of the Pueblo County and the Colorado Medical Societies. He was also a member of the American College of Pathology, the American Society of Clinical Pathologists, and the Colorado Society of Clinical Pathologists.

Following his graduation from medical school in 1949 he specialized in pathology and at the time of his death he was Chief Pathologist at Parkview Hospital in Pueblo. His death occurred only a few hours after his election as coroner of Pueblo County.

Since starting his practice in Pueblo, Dr. Marsh has been active in community, civic, and political affairs.

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SOCIETY OFFICERS

Colorado Medical Society

Officers—1966-67—Terms of Officers and Committeemen expire at the Annual Session of the year indicated. Where no year is indicated the term is for one year and expires Sept. 23, 1967, at the Annual Session in Colorado Springs.
President: Myron C. Waddell, Denver.
President-elect: Henry H. Zeigel, Collbran.
Vice President: Eugene B. Ley, Pueblo.
Treasurer: William A. Day, Colorado Springs, 1968.
Constitutional Secretary: Marvin E. Johnson, Denver, 1969.
Additional Trustees: Carl H. McLauthlin, Denver, 1967; Kenneth A. Platt, Westminster, 1967; William A. H. Rettberg, Denver, 1968; Robert W. Ludwick, Sterling, 1969.
Delegates to the American Medical Association: Harlan E. McClure, Lamar, Dec. 31, 1967 (Alternate, Vernon L. Bolton, Colorado Springs, Dec. 31, 1967); Gatewood C. Milligan, Englewood, Dec. 31, 1967 (Alternate, Ray G. Witham, Craig, Dec. 31, 1967); Kenneth C. Sawyer, Denver, Dec. 31, 1968 (Alternate, Robert E. McCurdy, Denver, Dec. 31, 1968).
Speaker, House of Delegates: Matthew L. Gibson, Aurora.
Vice Speaker, House of Delegates: John M. Wood, Englewood.
Foundation Advocate: W. Bernard Yegge, Denver
Historian: Hermann B. Stein, Denver.
Historian Emeritus: Bradford Murphey, Denver.
Scientific Editor for Colorado and Chairman of the Editorial Board, Rocky Mountain Medical Journal: Douglas W. Macomber, Denver.
Assistant Scientific Editor for Colorado, Rocky Mountain Medical Journal: Carl H. McLauthlin, Denver.
Executive Secretary: Donald G. Derry, 1609 E. 18th Ave., Denver. Office Telephone 399-1222.

Montana Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.
President: Albert L. Vadheim, Bozeman.
President-elect: Alfred M. Fulton, Billings
Vice President: Mark B. Listerud, Wolf Point.
Secretary-Treasurer: Oscar A. Swenson, Sidney
Assistant Secretary-Treasurer: Hugh V. Anderson, Great Falls
Delegate to the A.M.A.: Herbert T. Caraway, Billings
Alternate Delegate to the A.M.A.: Robert W. Thometz, Butte
Executive Committee: Albert L. Vadheim, Bozeman; Alfred M. Fulton, Billings; Mark B. Listerud, Wolf Point; Oscar A. Swenson, Sidney; Hugh V. Anderson, Great Falls; Robert W Thometz, Butte; Paul J. Gans, Lewistown; Robert K. West, Cut Bank.
Scientific Editor, Rocky Mountain Medical Journal: Warren D. Bowman, Jr., Billings
Associate Editor, Rocky Mountain Medical Journal: L. Russell Hegland, Billings
Executive Secretary: L. Russell Hegland, 1236 North 28th St. (P. O. Box 1692), Billings. Office Telephone 259-2585

Nevada State Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.
President: William M. Tappan, Reno.
President-elect: Richard A. Petty, Carson City.
Secretary-Treasurer: V. A. Salvadorini, Reno.
Immediate Past President: Joseph M. George, Jr., Las Vegas.
Delegate to A.M.A.: Leslie A. Moren, Elko.
Alternate Delegate to A.M.A.: Thomas S. White, Boulder City.
Scientific Editor for Nevada, Rocky Mountain Medical Journal: Harry J. McKinnon, Las Vegas.
Assistant Scientific Editor for Nevada, Rocky Mountain Medical Journal: Wesley W. Hall, Reno.
Associate Editor, Rocky Mountain Medical Journal: Nelson B. Neff, Reno.
Executive Secretary: Mr. Nelson B. Neff, 3660 Baker Lane, Reno. Telephone 323-6788.

New Mexico Medical Society

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.

President: Tom L. Carr, Albuquerque.

President-Elect: Emmit M. Jennings, Roswell.

Vice President: Earl B. Flanagan, Carlsbad.

Secretary-Treasurer: John D. Abrums, Albuquerque.

Immediate Past President: Robert P. Beaudette, Raton

Speaker, House of Delegates: Hugh B. Woodward, Albuquerque.

Vice Speaker, House of Delegates: Ronald V. Dorn, Albuquerque.

Delegate to A.M.A.: Allan L. Haynes, Clovis, January 1, 1965 to December 31, 1966.

Alternate Delegate to A.M.A.: James C. Sedgwick, Las Cruces.

Councilors for Three Years: Don R. Clark, Roswell; Alvin S. Hartz, Farmington; Samuel E. Neff, Clovis.

Councilors for Two Years: Harry D. Eilis, Santa Fe; Armin T. Keil, Raton.

Councilors for One Year: W. W. Kridelbaugh, Albuquerque; Richard C. Sherman, Alamogordo.

Scientific Editor for New Mexico, Rocky Mountain Medical Journal: Marcus J. Smith, Santa Fe.

Associate Editor, Rocky Mountain Medical Journal: Ralph R. Marshall, Albuquerque.

Executive Secretary: Mr. Ralph R. Marshall. 3010 Monte Vista Blvd., NE, Albuquerque; Telephone 265-8494, area code 505.

Utah State Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.

President: Paul A. Clayton, Salt Lake City

President-elect: Drew M. Petersen, Ogden

Past President: L. V. Broadbent, Cedar City

Honorary President: Juel E. Trowbridge, Bountiful

Secretary '67: Russell M. Nelson, Salt Lake City

Treasurer '69: Ralph C. Richards, Salt Lake City

Delegate to A.M.A.: Drew M. Petersen, Ogden

Alternate Delegate to A.M.A.: Ralph E. Jorgenson, Provo

President, Medical Service Bureau: Wilford G. Biesinger, Springville

Speaker, House of Delegates: J. Clare Hayward, Logan

Alternate Speaker, House of Delegates: William R. Christensen, Salt Lake City

ADDITIONAL TRUSTEES: Box Elder County Medical Soc. '69, Thomas L. Hannum, Brigham City; Cache Valley Medical Soc. '66, Robert S. Budge, Smithfield; Carbon County Medical Soc. '66, William M. Gorishek, Price; Central Utah Medical Soc. '67, Halvard J. Davidson, Manti; Salt Lake County Medical Soc. '66, John H. Clark, Salt Lake City; Southeastern Utah Medical Soc. '67, Jerrold C. Smith, Monticello; Southern Utah Medical Soc. '67, Joseph J. Sannella, Kanab;Uintah Basin Medical Soc. '67, R. V. Larson, Roosevelt; Utah County Medical Soc. '68, John H. Rupper, Provo; Weber County Medical Soc. '67, Douglas C. Barker, Ogden.

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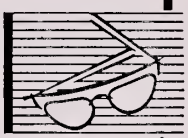

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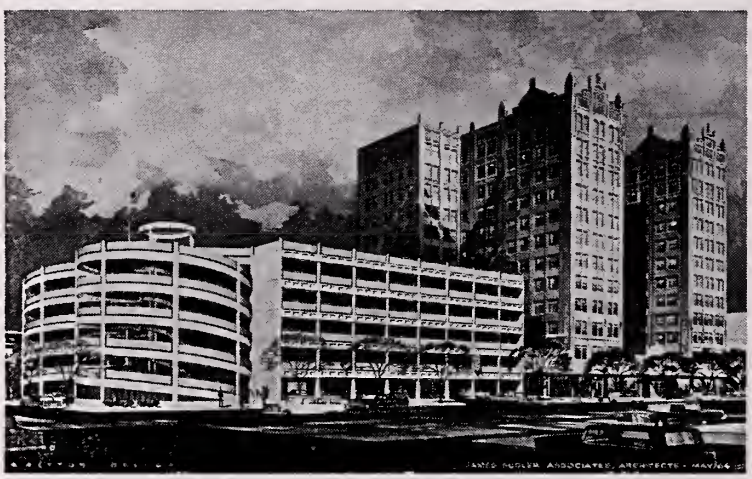

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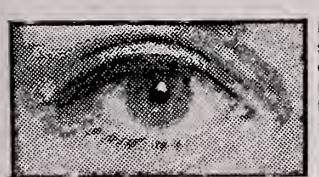

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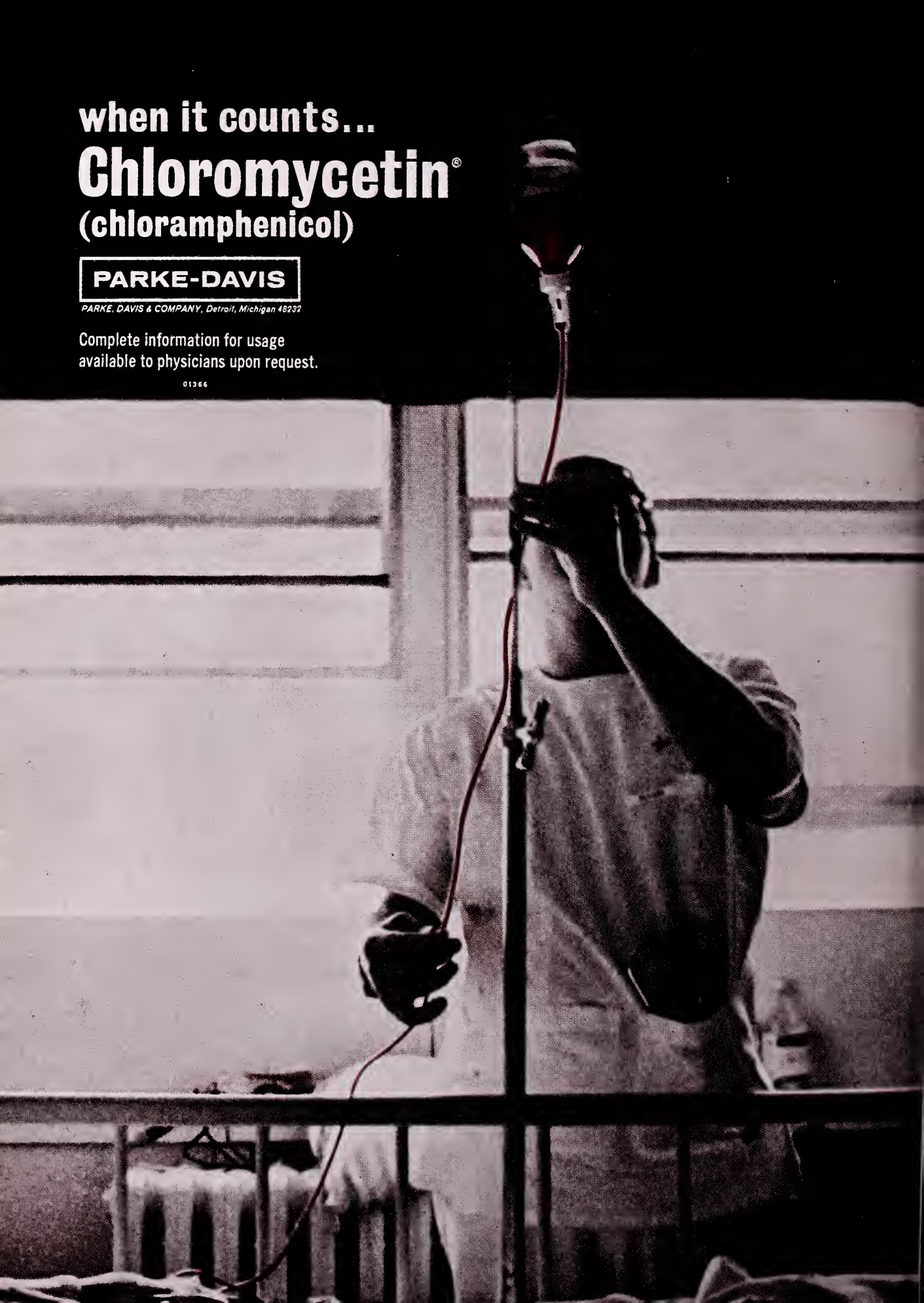

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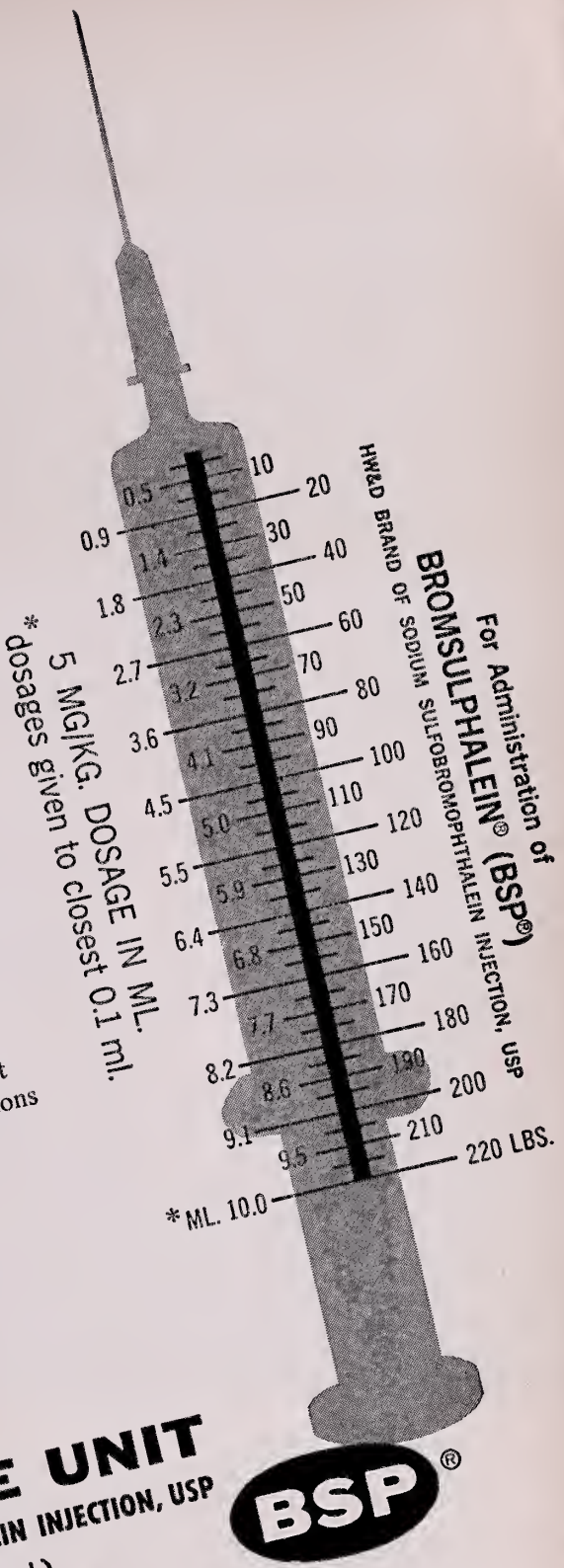

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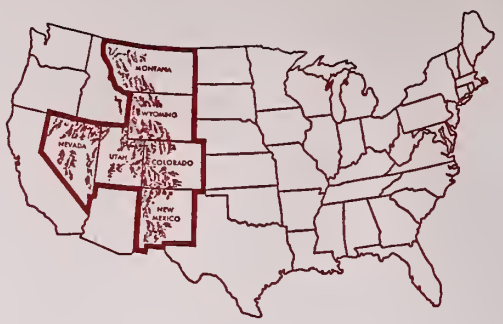

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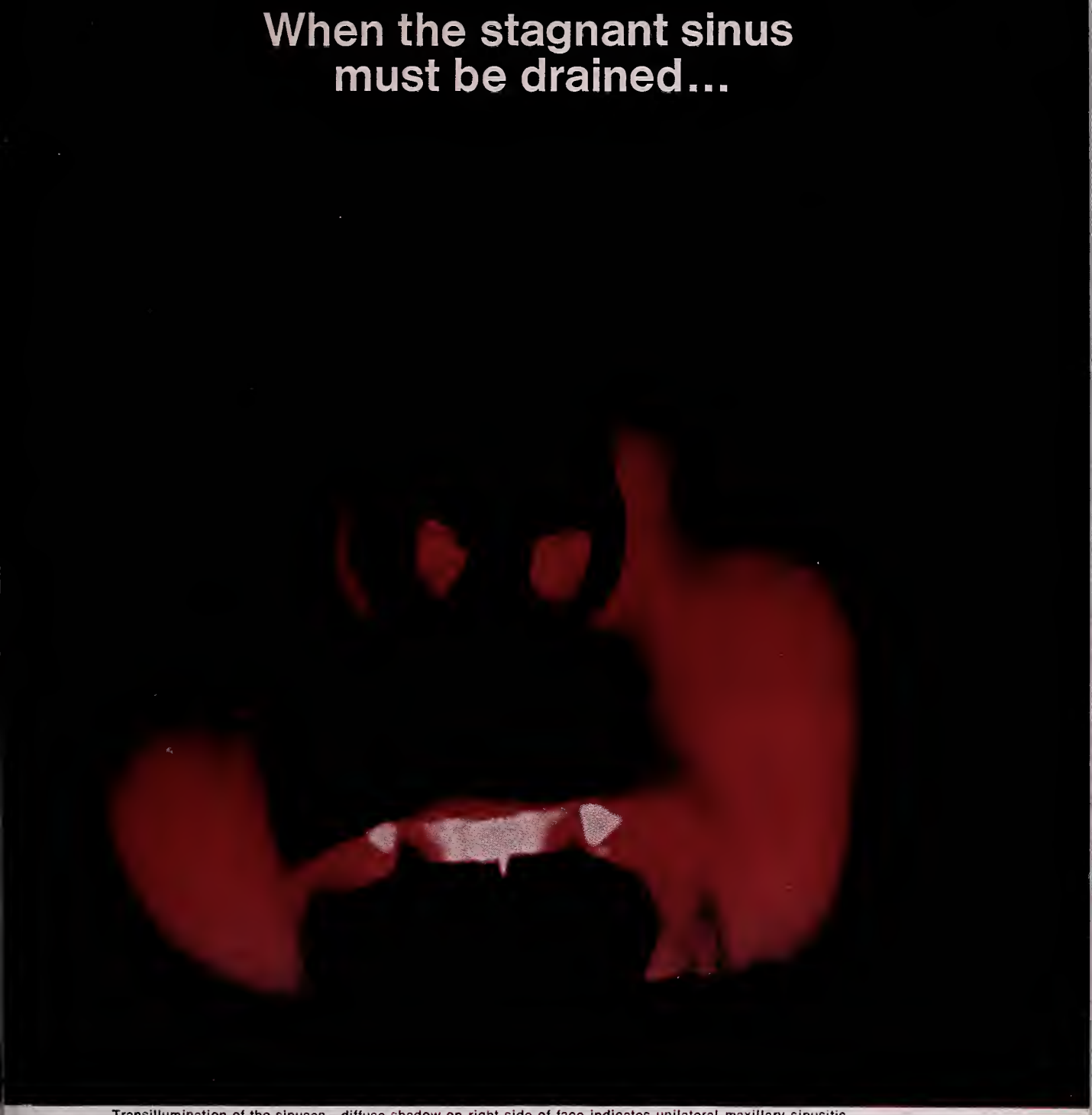
When the stagnant sinus must be drained...



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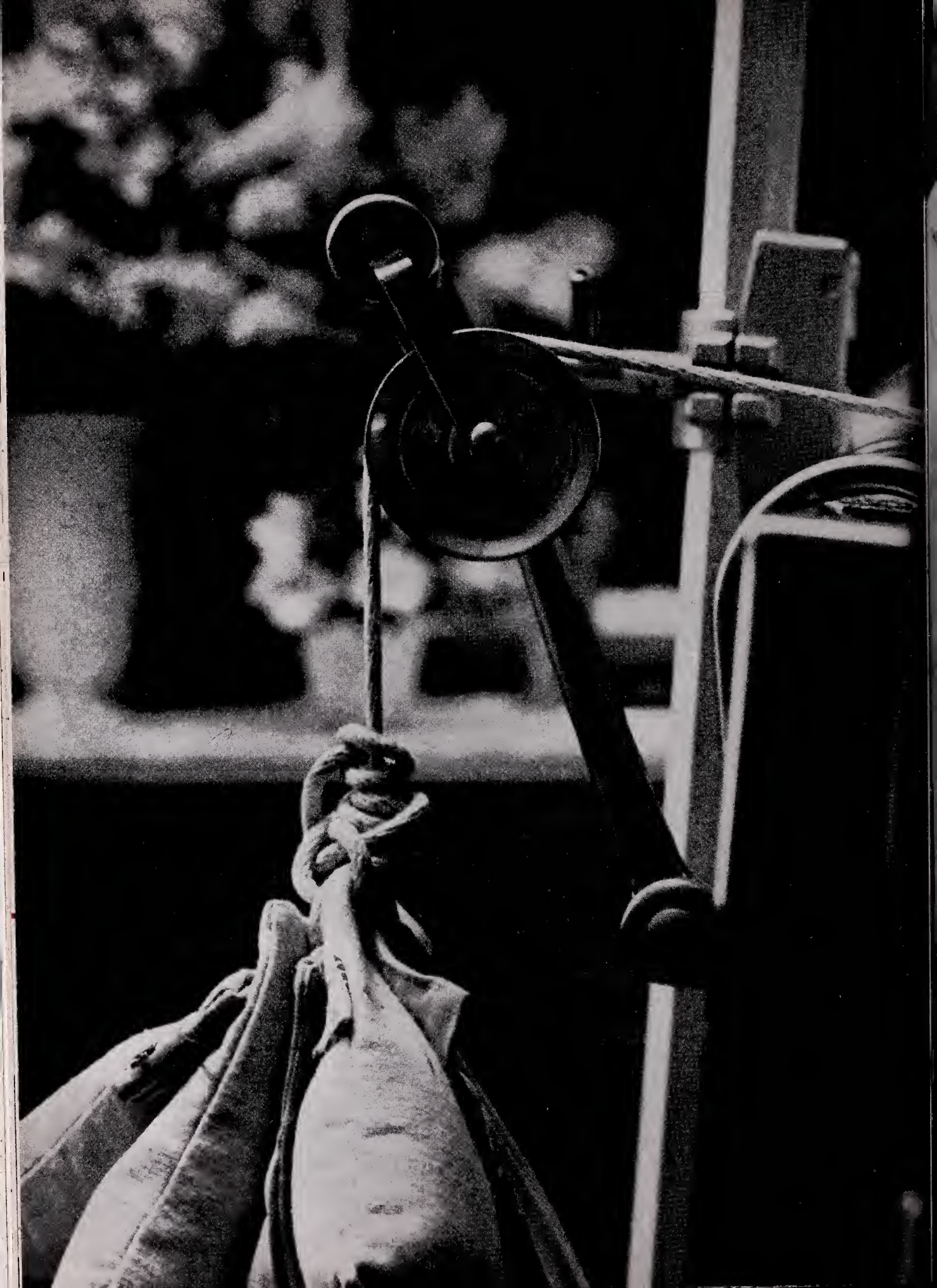

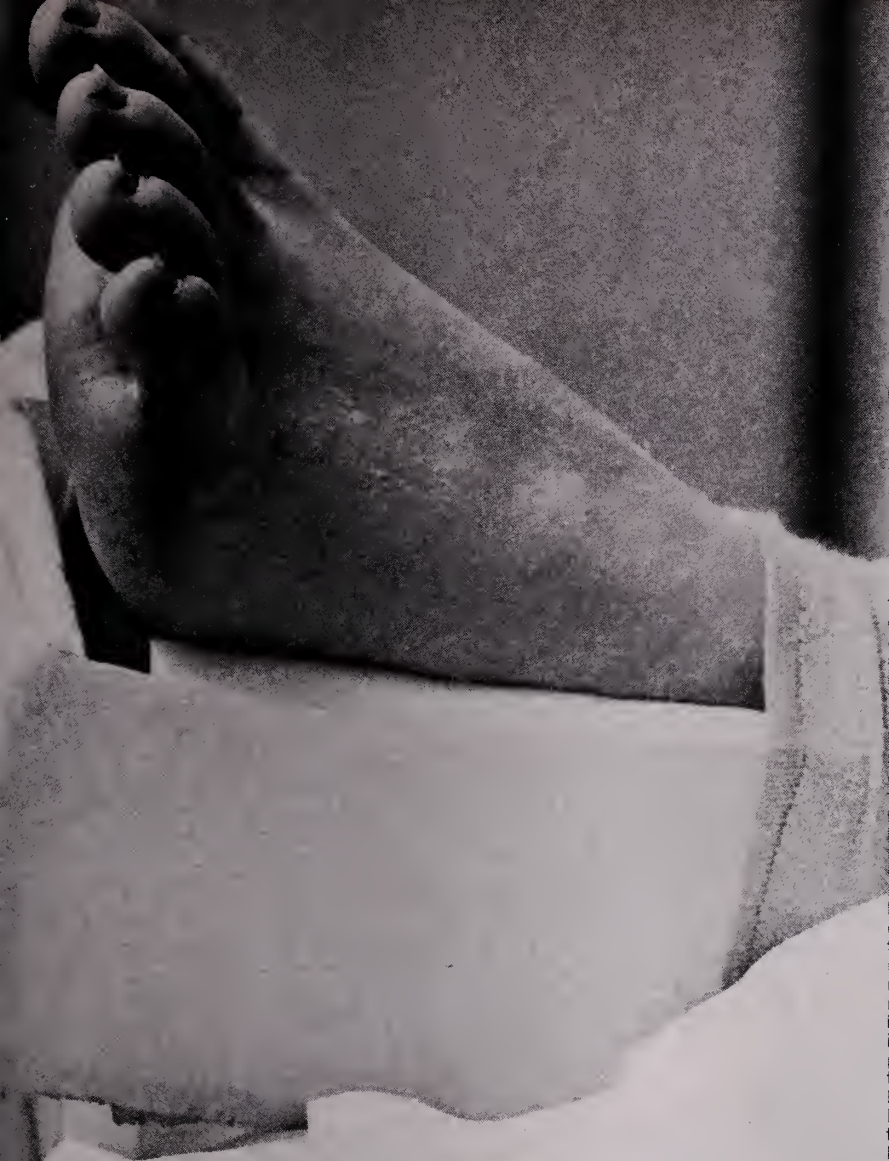

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Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness and CNS depression. Overdosage may result in salicylate intoxication. Meprobamate rarely causes allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioedema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

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Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

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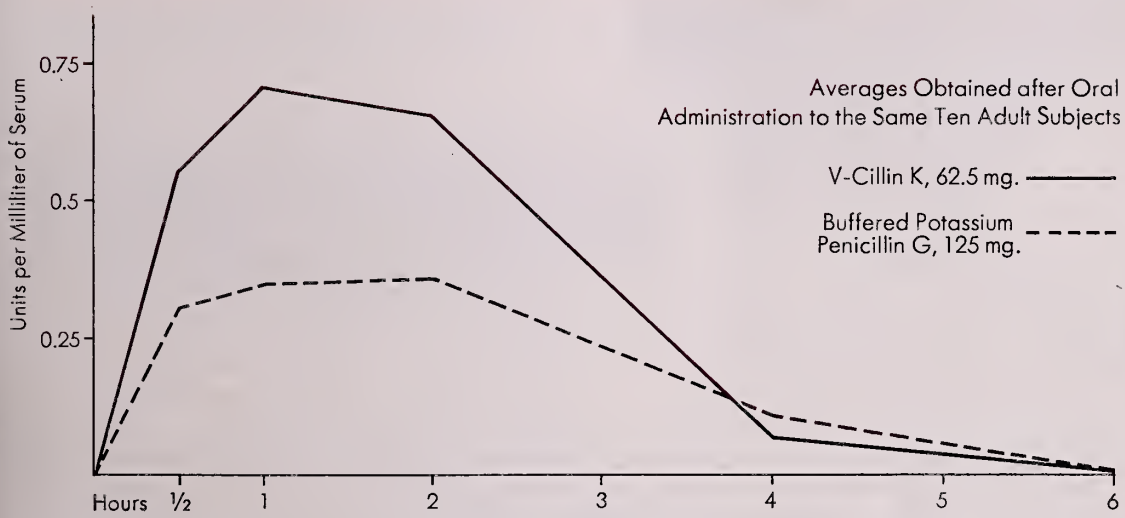

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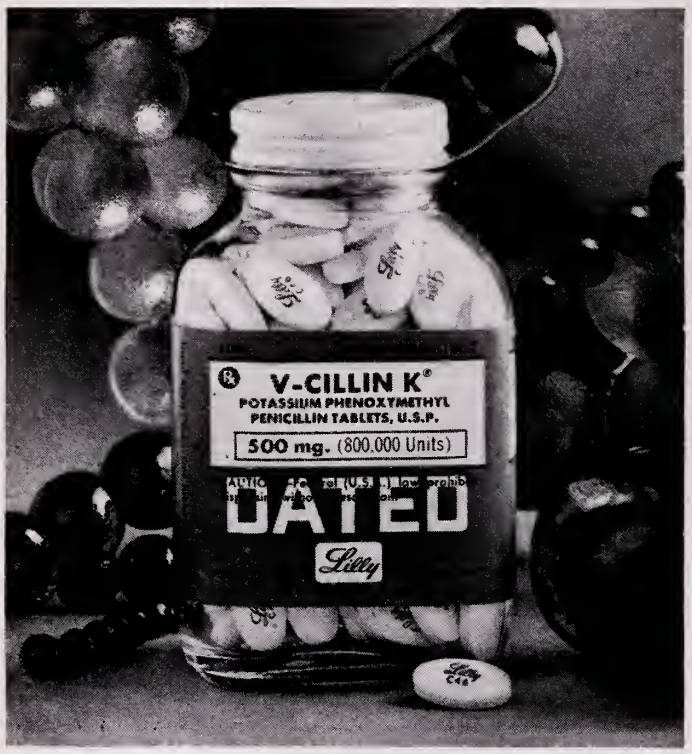

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Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy. Reactions occur more frequently in individuals with bronchial asthma or other allergies or in those who have previously demonstrated sensitivity to penicillin. If hypersensitivity reactions occur, the drug should be discontinued.

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The use of antimicrobial agents may be associated with the overgrowth of antibiotic-resistant organisms; in such a case, antibiotic administration should be stopped and appropriate measures taken.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every six hours for three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

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SOURCE: DUNCAN, G.G.: SCIENCE NEWS LETTER, 83:403 (JUNE 29) 1963.

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SOURCE: JAMA 186:65 (OCT. 5) 1963.

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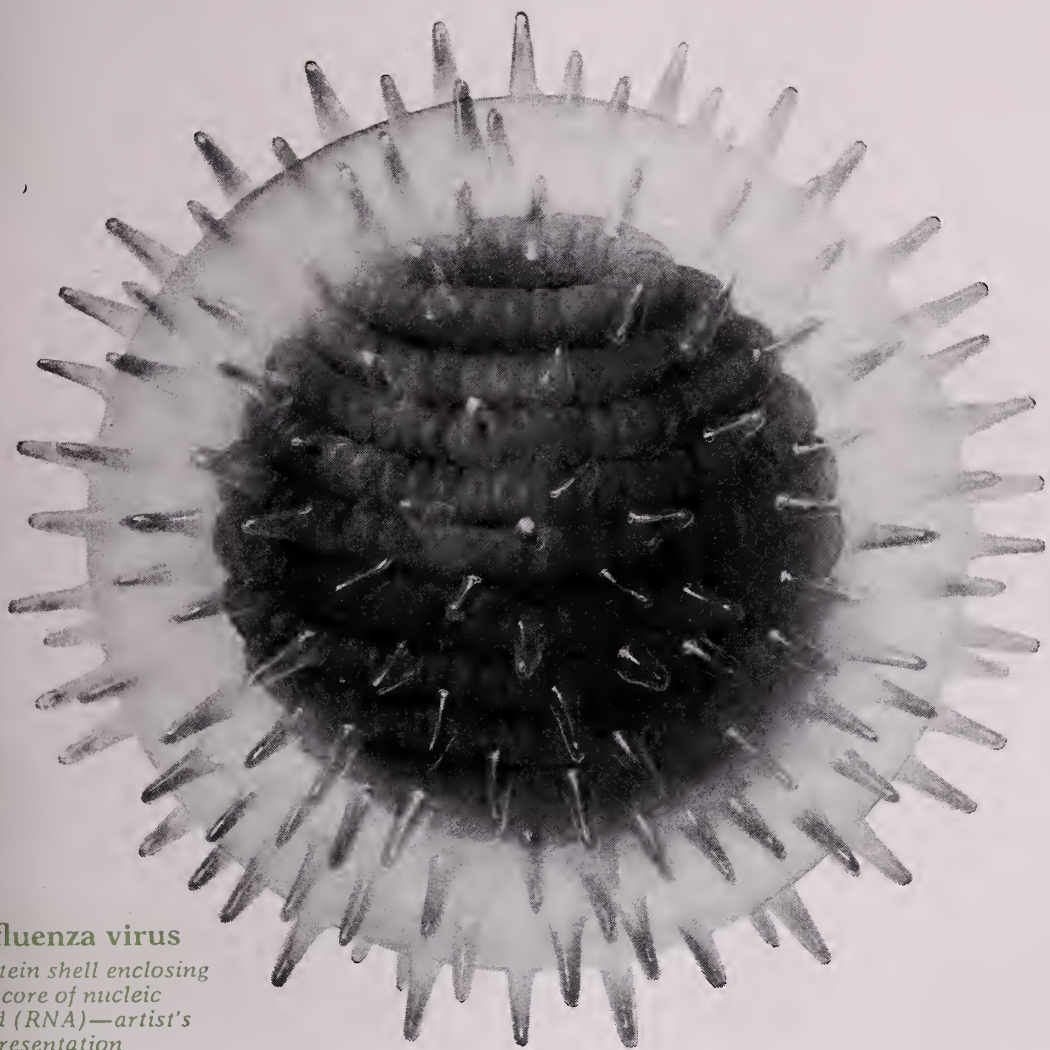

Influenza virus
Protein shell enclosing the core of nucleic acid (RNA)—artist's representation

The incidence of influenza A_2. In this country, where influenza is one of the leading causes of morbidity, influenza A_2 (Asian) continues to be a serious medical problem. In 1957 influenza A_2 was responsible for approximately 40,000 excess deaths in a three-month period. Since that year the most prevalent influenza virus has been A_2 (Asian).

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What Symmetrel® means to your patient

...possible immediate influenza A_2 protection when taken following suspected contact.

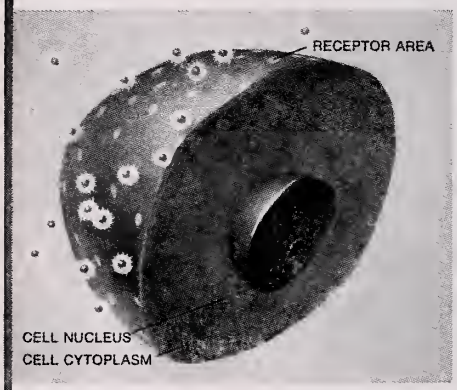
...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A_2 is especially hazardous.

...a high degree of safety in clinical use.

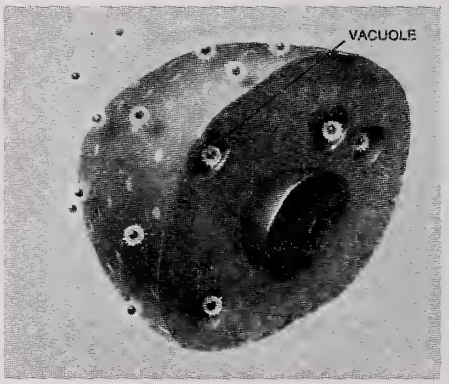
...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

How the influenza virus invades and destroys the untreated cell



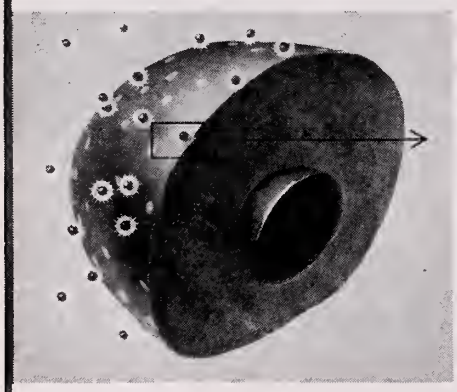
1 Viruses outside the cell attach themselves to specific cell receptor areas

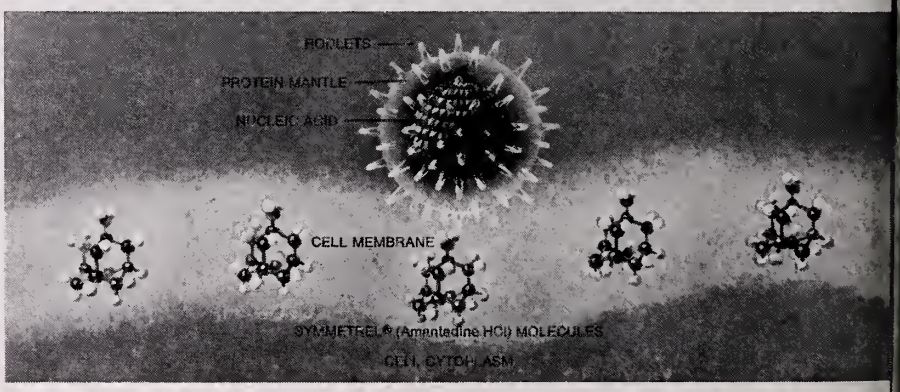


2 The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm

3 The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion[1]





Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

1. "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Haff, R. F.; and Goldsby, R. A., Journal of Bacteriology *90*,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A_2 in persons of all age groups. Early use is recommended, preferably before or as soon as possible after actual or suspected contact with individuals suffering from influenza A_2. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.
Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.

DUPONT

Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration

Now, now, Mrs. Forsythe, we've never lost a cold patient yet.

When she's experiencing acute discomfort from cold symptoms, it's small wonder the patient becomes distressed about her condition.

She will breathe easier when you prescribe Novahistine LP.

Novahistine LP is a long-acting decongestant that helps restore normal mucus secretion and ciliary activity—physiologic mechanisms which prevent infection of the respiratory tract. A dose of two tablets taken in the morning and repeated in the evening will usually keep air passages clear for 24 hours.

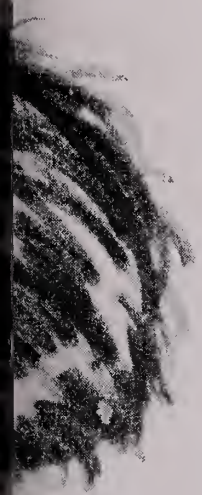
Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution patients who operate machinery or motor vehicles that drowsiness may result.

Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

For relief of nasal congestion.

Dow **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis



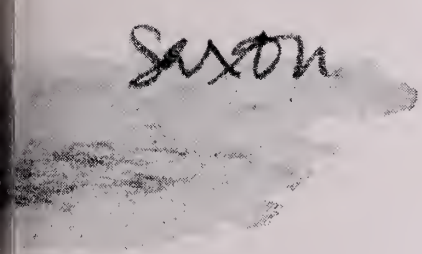


Photo professionally posed

Mike expects a penicillin injection. He's about to be pleasantly surprised.

His physician is going to prescribe an oral penicillin —Pen•Vee® K (potassium phenoxymethyl penicillin). It's usually so rapidly and completely absorbed that therapeutic serum levels are produced in 15 to 30 minutes. Higher serum levels generally last longer than with oral penicillin G.

Indications: Infections due to pathogens susceptible to oral penicillin G. Prophylaxis of rheumatic fever in patients with previous history of the disease.

Precautions: Skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin-allergy may occur. Measures for treating anaphylaxis should be readily available: epinephrine, oxygen and pressor drugs for relief of immediate allergic reactions; antihistamines and corticosteroids for delayed effects. Penicillin may delay or prevent the appearance of primary syphilitic lesions. Patients with gonorrhea who are suspected of concurrent syphilitic infections should be tested serologically for at least 3 months. Where lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. As with other antibiotics overgrowth of nonsusceptible organisms may occur; if so, discontinue and take appropriate measures. Treat β-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent development of rheumatic fever or glomerulonephritis.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

Composition: Tablets—125 mg. (200,000 units) and 250 mg., (400,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. **Wyeth Laboratories Philadelphia, Pa.**

ORAL **PEN • VEE® K**

(potassium phenoxymethyl penicillin) Wyeth®

"Yes, Doctor, the pain is gone."

■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

'Empirin'® Compound with Codeine Phosphate gr. ½ No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

Keeps the Promise of Pain Relief

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N. Y.

To the Editor:

Several days after dispatching my editorial concerning a national alcoholic rehabilitation program, it was announced on October 20 by Secretary John Gardner that such a program was being established within the National Institute of Mental Health, at Bethesda, Md. Gardner said the new program was created in response to directives President Johnson included in his March health message to Congress.

The program will include:

A National Center for the Prevention and Control of Alcoholism to conduct, encourage, and support research on alcoholism in universities and research centers.

An 18-member National Advisory Committee on Alcoholism to include representatives of medicine, social work, labor, industry, etc.

The immediate goal is to make the best treatment and rehabilitation services available to those who need them now. The long-range goal is to develop effective methods of preventing alcoholism and excessive drinking.

It well may be that safe highway transportation will come to be. Hope springs eternal!

Horace E. Campbell, MD

American College of Physicians announces 1967 award winners

Maxwell M. Wintrobe, M.D., Salt Lake City, Utah, has been named as one of the five recipients of annual awards bestowed by the American College of Physicians. The honors, in the form of gold medals and citations, will be presented April 13 at the Annual Meeting of the College in San Francisco.

Dr. Wintrobe, professor and head of the department of internal medicine at the University of Utah College of Medicine, will receive the John Phillips Award for distinguished contributions in internal medicine.

FREE YOUR PATIENTS from
/ deficient neutralization
/ poor taste
/ burdensome cost
***with* DICARBOSIL® antacid**

■ **effective neutralizing power**—Two tablets in vitro[1], provide nearly 2 hours' relief within effective pH range 3 to 5.5.

■ **pleasant taste**—A fresh mint flavor patients continue to enjoy, because with Dicarbosil's unique* formulation, chalky aftertaste is no longer a problem.

■ **exceptional economy**—Due to its high neutralization capacity combined with low cost (1¢ or less per tablet), Dicarbosil is within the reach of all patients.

1. Schleif, R.H.: J.A.PH.A., 46:179,1957 *U.S. Pat. No. 3,062,714

Active Ingredients: Calcium Carbonate Precipitated 0.489 Gm., Magnesium Carbonate 0.011 Gm., Magnesium Trisilicate 0.006 Gm.

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winter 1966

DORSEY Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska. Address communications to Raymond C. Pogge, M.D., Director of Medicine.

this issue: the nose as a shock organ

the nose as a shock organ

by Charles J. Shagoury, M.D., Chelmsford, Massachusetts

"Is it a cold, hay fever, or has he been reprimanded by his boss?" Occasionally, you will ask yourself this question when confronted by a patient with abrupt onset of rhinorrhea, nasal obstruction, and sneezing. Usually the history will elucidate the problem, but examination of the nose will often provide valuable clues to the correct diagnosis.

The nose is a shock organ in a double sense. First, it is in the nose that the confrontation takes place with the surrounding atmosphere. For twenty-four hours a day, the nose must meet the varying challenges of the inspired air, containing perhaps noxious chemicals, dust, dirt, bacteria, viruses, fungi, and industrial pollutants of all kinds, and render it clean, virtually sterile, and fit for the sensitive alveoli of the lungs. Whatever the temperature or humidity of the atmosphere, the nose must transmit it to the lungs at approximately 98°F, and with a humidity of approximately 40%.[1]

Second, in particularly susceptible patients, the nose acts as a shock organ in a manner totally unrelated to its normal function. Persons with hay fever respond to ordinarily harmless materials by extreme nasal congestion, with marked rhinorrhea and violent spasms of sneezing. In some patients, exposure to threatening or disagreeable agents, or situations involving mental conflict may result in a reaction which is exclusively nasal, with swelling of the turbinates, and marked hypersecretion.[2]

Nasal symptoms usually result when the nose seeks to perform its function of getting rid of noxious and dangerous elements in the atmosphere, and prevent their admission to the trachea and lungs. Small particles are removed by the mucous coating which blankets the nasal passages. This mucous blanket contains a bacteriostatic agent, lysozyme, which destroys most air-borne bacteria.[3] The mucinous content renders the surface sticky, causing dusts and small particles to adhere. It has been postulated that this process is rendered more effective through adsorption because of a surface electrical charge on the nasal mucosa.[4] The cilia then sweep the particulate matter to the pharynx. The nose can prevent entrance into the lungs of particles as small as three microns in diameter, but smaller particles elude the nasal barrier. Most bacteria causing respiratory infections are one to three microns in diameter, but since they usually are inhaled in clumps, they are efficiently removed as a rule. Viruses, which are of the order of 1/1000 of this size, are less efficiently dealt with, unless they occur in very large aggregates.[5]

The nose will react in a more or less similar manner, whatever the nature of the offending agent, whether it be an irritant chemical, virus, pollen, or distasteful emotional situation. In acute coryza, the most characteristic sign is a profuse watery discharge. The volume of secretion may rise from practically nothing to nearly 60cc in twenty-four hours.[6] The mucous membrane is reddened and engorged, while the turbinates are markedly swollen. After the first day or two, the secretion becomes thicker, yellowish, and more difficult to expel. The surface cells are largely destroyed, contributing to the copious discharge, which now also contains numerous inflammatory cells which have migrated to the area. Gradually, over a period of a few days, or a week, the flood abates, the swelling and redness subside, and the nasal epithelium resumes a healthy appearance.

Repeated attacks of rhinitis, particularly if there is an underlying element of obstruction, may result in chronic rhinitis. The mucous membrane is constantly swollen and reddened. Sticky, mucopurulent secretions are a continuous feature, and the glandular elements are hypertrophied. Commonly, the mucosal surface takes on an irregular, rounded "mulberry" appearance, and nasal passages are occluded by the swollen turbinates and redundant mucosa.

While all of us are susceptible to colds, the victim of hay fever, or allergic rhinitis, displays a marked nasal reaction to materials in the air which leave his associates unaffected. In such a patient, the nasal mucosa has become an allergic "shock" organ. Contact with the nasal allergen causes local release of histamine, with vasodilatation, increased vascular permeability, and severe nasal congestion, similar to the "wheal" and "flare" reactions in the skin, when the epidermis is the allergic shock organ. While we eagerly await the coming of spring, the hay fever sufferer dreads the blooming season, whose invisible pollens are poisons to his sensitive nose. His neighbor's cat or dog may provoke paroxysms of uncontrollable sneezing. In some cases a specific allergen is not identified, but the triad of rhinorrhea, nasal obstruction, and sneezing is present.[7] The nose in these cases shows a pale, boggy, edematous mucosa, with a thin mucoid secretion. The mucous membrane shows extreme retractility to 1% cocaine or ephedrine. If the patient has medicated himself prior to examination, the nasal passages may appear abnormally patent, or show exaggerated congestion due to rebound reaction. The secretion may show a large number of eosinophils particularly after an attack of sneezing or rhinorrhea. Touching the mucosal surface, especially of the inferior turbinate, leaves an indentation, showing that the swelling is due to stasis and edema, rather than actual hyperplasia of the mucous membrane as in chronic hypertrophic rhinitis. Though the pale swollen mucosa is the hallmark of allergic rhinitis, as usually seen by the physician, exposure of allergic subjects to their known allergens results in a brief hyperemic phase, followed by pallor and edema.[8]

In the later stages of allergic rhinitis, the chronic edema of the mucous membrane results in the formation of polyps, clusters of grape-like masses hanging from the roof of the nose, with a pale glistening surface, contributing significantly to the sense of nasal obstruction and oppression.

A large group of patients show symptoms of nasal congestion when confronted by adverse life situations.[9] In these unfortunate persons, anxiety, frustration, and resentment are often accompanied by a runny nose and nasal obstruction. Lacrimation adds to the nasal stuffiness. This autonomic response, mediated by the parasympathetic nervous system, may be part of a general parasympathetic reaction, or may possibly represent in part, a symbolic effort to wash out and crowd out the offending situation.

Nasal congestion may also occur in some patients at times of sexual stimulation, and in women during menstruation and pregnancy, even to the point of epistaxis.[10] The relationship is obscure; castration results in atrophy of the nasal glands, and their action is inhibited by the hormones of the hypophysis and the thyroid.[11] The nose may be the shock organ in drug therapy. The nose may also bear the brunt of industrial stress, in those who work in a hot dry atmosphere, or those exposed to acid fumes, or irritating dusts. As the air in our cities is increasingly polluted by exhaust fumes, and industrial irritants, whole urban populations may suffer from chronic nasal and respiratory symptoms.

Of course, nasal reactions are not just infectious, or allergic, or emotional. Particularly in the chronic sufferers, there is an interdependence of all three. Death of a relative, or other psychic shock can pre-

(concluded on following page)

it's a comforting thing to know

For postnasal drip, clogged ears and stuffed and runny noses

Triaminic® timed-release tablets

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

keep patients comfortable 'round the clock. 24-hour decongestion on just a single tablet dosed morning, mid-afternoon and at bedtime. Patients regain senses and can breathe, smell and taste again.

Triaminic. Isn't that a comforting thing to know?

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

(Advertisement)

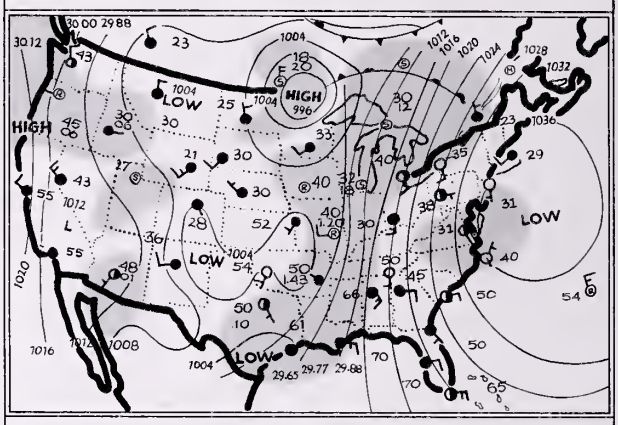
cipitate an attack of rhinorrhea in hay fever sufferers.[12] Others develop attacks of vasomotor rhinitis following change in temperature, chilling, or exposure to the sun, or simply warm bedclothes.

The complex interplay of allergy and infection is largely unclear. Allergy to the viruses and bacteria which cause infection has been postulated, but is difficult to demonstrate. The swollen obstructed allergic nose is more susceptible to infection. At the same time, infection often precedes or precipitates an allergic attack. Exposure of a susceptible patient to an allergen can activate latent virus organisms leading to infection.[13] This "jolt" reaction represents a summation of an allergen and a virus leading to symptoms in the nose as a shock organ, which neither could have produced alone. In childhood, repeated attacks of bronchitis and colds may be inflammatory reactions to an allergen, or precipitated by exposure to an allergen. These children may later develop typical allergic rhinitis. On the other hand, children with typical allergic histories, eczema, asthma, and allergic familial backgrounds, may later develop typical infectious rhinopathies. Skin tests in such patients are usually positive.

Nasal reactions are part of the systemic response of the patient to an unwelcome stimulus. In cases of respiratory infection and exposure to atmospheric irritants, the reactions are useful, and to some extent desirable. They are usually self-limited, disappearing within a few days, or upon removal of the provoking agent. Here the distressing symptoms can be ameliorated with appropriate decongestant agents, or, in the case of severe or complicated respiratory infections, antibiotics may be given, with reasonable confidence of a cure. On the other hand, when nasal reactions are the peculiar response of an individual to an allergen, or to an undesirable situation, they serve no useful purpose. The nose here is a shock organ in a stressful situation, but can furnish no response of value. It merely causes the patient symptoms which add to his problems. In these cases, symptomatic treatment is of great benefit, but often the underlying faulty pattern of response cannot be altered. Such a patient may literally be considered to be paying his way in life "through the nose."

References 1. Maures, E. R., Mendez, F. C., Jr., and Hilsinger, R. C.: Importance of the Nose in Filtering and Humidifying Inspired Air. Ohio State Med. J. 61:41-42. 2. Holmes, T.,Goodell H., Wolf, S., and Wolff, H. G.: The Nose. Springfield, Ill. 1950 Charles C. Thomas p. 10 ff. 3. Boies, L. H. R.: Fundamentals of Otolaryngology. Phila. W. B. Saunders Co. 1954 p. 160. 4. Proetz, A. W.: Applied Physiology of the Nose. St. Louis 1941 Zimmerman-Petty Co. p. 6. 5. Spikard, A.: The Common Cold, A Survey. Disease of the Chest 48:545-49. Nov. 1965. 6. Ibid. 7. Bourdial, J.:Role of Allergy in Upper Respiratory Tract Infection. Europa Med. Paris 4:75-80 1965. 8. Holmes, et al. The Nose p. 22. 9. Ibid. p. 320. 10. Proetz, A. W. op. cit. p. 321. 11. Ibid. p. 320. 12. Rees, Linford J.: Physiogenic and Psychogenic Factors in Vasomotor Rhinitis. J. Psychosomatic Research 8:101 Sept. 1964. 13. Horesh, A. J.: Allergy and Infection. An Allergy 23:621-35 Dec. 1965.

Weather Forecast Throughout the Nation



RAIN TURNING TO SNOW, INCREASING WINDS AND DROPPING TEMPERATURES FOLLOWED BY COUGH, CONGESTION AND PAIN

Tussagesic® provides up to 24-hour coverage of the tough cold with a single timed-release tablet dosed morning, midafternoon and at bedtime. Coughs are broken up, runny and stuffed noses are cleared and pain is relieved.

Each Tussagesic® timed-release tablet contains:

Triaminic® ..... 50 mg.
(phenylpropanolamine hydrochloride 25 mg.; pheniramine maleate 12.5 mg.; pyrilamine maleate 12.5 mg.)
Dextromethorphan hydrobromide .... 30 mg.
Terpin hydrate .....180 mg.
Acetaminophen .....325 mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: Patient should not drive a car or operate dangerous machinery if drowsiness occurs. Except under professional care, do not give to patients under 12 yrs. or those who have persistent cough, high fever, heart or thyroid disease, hypertension or diabetes or use for more than 10 days.

(Advertisement)

New
low-cost tetracycline/antifungal therapy

for broad-spectrum activity
plus specific antifungal prophylaxis
at significant patient savings

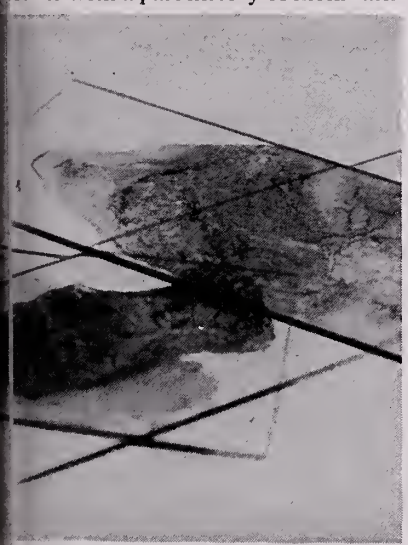
Whenever tetracycline is indicated in these candidates for Candida:

abetic patients

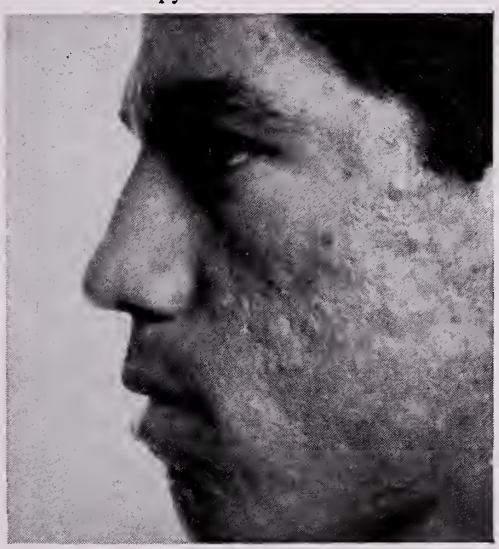
2. nonpregnant women with a history of recent or recurrent monilial vaginitis

3. elderly or debilitated patients

ients with a past history of moniliasis



5. patients on long-term tetracycline or corticosteroid therapy



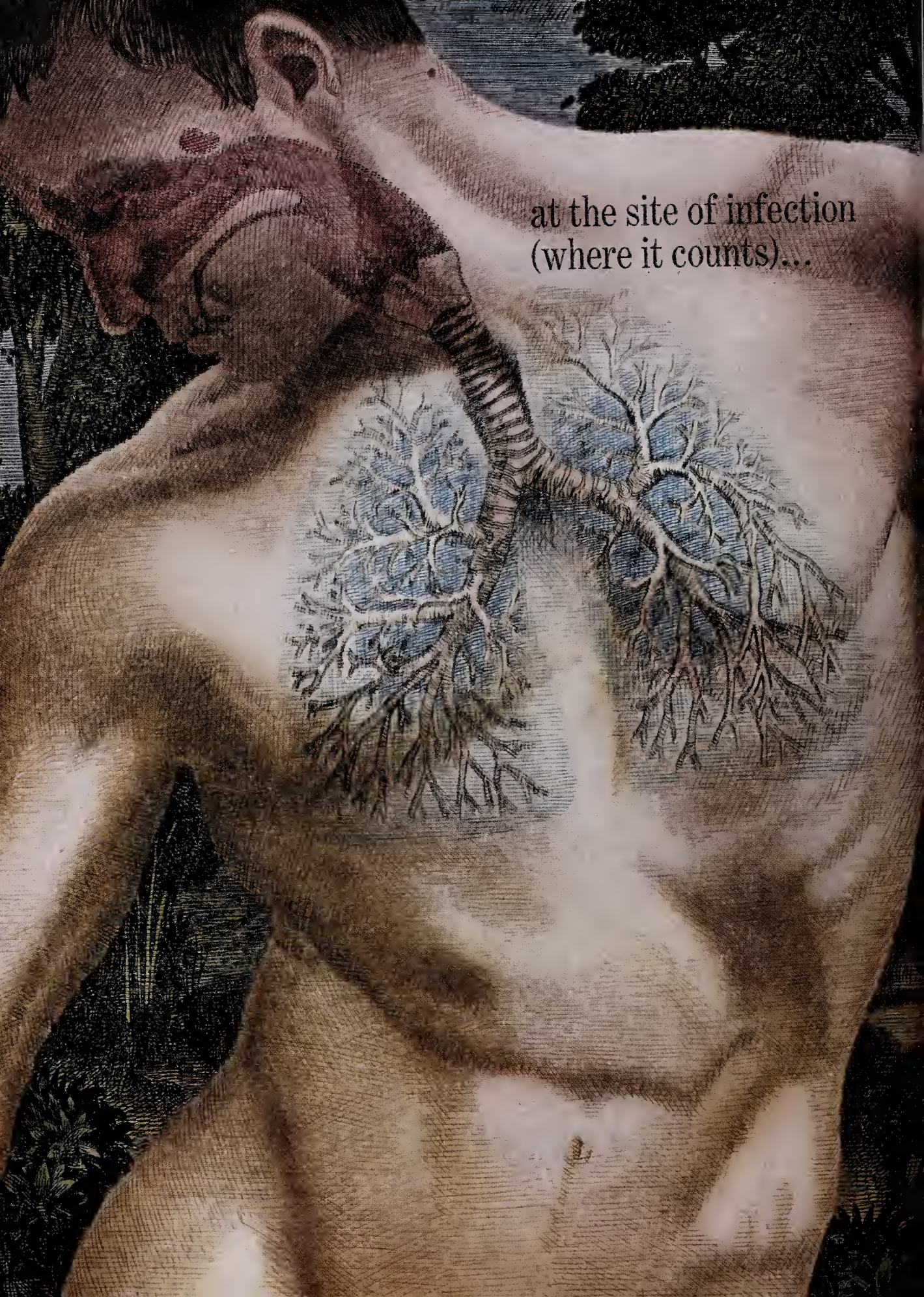
BRISTOL THERAPEUTIC SUMMARY: For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfection may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule *q.i.d.* Continue therapy for 10 days in beta-hemolytic streptococcal infections. Administer one hour before or 2 hours after meals. *Supply:* Capsules, bottles of 16. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin.

BRISTOL
BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York

Tetrex-F®

Each capsule contains tetracycline phosphate complex equivalent to tetracycline hydrochloride 250 mg. and nystatin 250,000 units.

Tetrex-F is priced lower than most tetracycline-antifungal products.


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone®

Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cephal flocculation and thymol turbidity tests, elevated serum glutam oxalacetic transaminase levels, peripheral eosinophilia, and nc mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has n been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared wi those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cour of treatment was observed in one patient treated with Ilosor and in two patients treated with penicillin. Seven other patien in the group receiving Ilosone and four others in the penicill group showed elevations in one of the tests at some time durir administration of the drugs.

Very satisfactory therapeutic results, without toxicity, we reported in 102 pediatric patients who received short-term (te day) courses of Ilosone in the treatment of streptococcus infe tions. Results of liver function tests in these patients were cor parable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic e fects are observed in a small proportion of individuals as a resu of a local stimulating effect of the medication on the alimenta tract; however, the normal intestinal gram-negative bacteri flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the u of erythromycin, there have been occasional reports of urticar skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of bo weight, the usual dosage is 5 mg. per pound every six hours; f children twenty-five to fifty pounds, 125 mg. every six hour (Tablets Ilosone Chewable should be chewed or crushed a swallowed with water.)

For adults and for children over fifty pounds, the usual dosa of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromyc therapy should be considered.

In the treatment of syphilis, the recommended total dosage 20 to 30 Gm. given in divided doses for a period of ten to fifte days. Close follow-up of the patient is necessary since erythr mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as pa of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days a recommended. In the treatment of gonorrhea, patients with suspected lesion of syphilis should have a dark-field examinatic before receiving antibiotics, and monthly serologic tests shou be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 m (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivale to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size package

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 196
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 196
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

70011

To "catch" your patient's cold so others won't...

the speckled tablet with a core of difference

SUSTAINED-ACTION

Naldecon®

Each tablet contains:	Outer layer (immediate action)	Core (sustained action)
phenylpropanolamine HCl	20 mg	20 mg
phenylephrine HCl	5 mg	5 mg
phenyltoloxamine citrate	7.5 mg	7.5 mg
chlorpheniramine maleate	2.5 mg	2.5 mg

Each teaspoonful (5 ml) of syrup contains the equivalent of one-half tablet

For rapid and sustained symptomatic relief of colds and minor upper respiratory infections.

Prescribing Information: For complete information consult Official Package Circular. **Effectiveness:** Clinical experience has shown this formulation to be effective in relieving the symptoms of nasal congestion associated with pollen allergy or minor upper respiratory infections (common cold, nasopharyngitis, acute and chronic sinusitis). **Precautions:** Do not drive or operate machinery while taking Naldecon. Exceed dose or give to children under 6 years old only on advice of physician. **Contraindications:** Severe hypertension, hyperthyroidism, serious organic heart disease or severe diabetes mellitus. **Usual Dose:** Adults: One tablet morning, midafternoon and evening. Naldecon tablets are scored and may be broken for fractional dosage, without loss of sustained-action effect. **Supplied:** Bottles of 50 and 500 tablets. Syrup, 1 pt. bottle.

BRISTOL

Bristol Laboratories
Division of Bristol-Myers Company
Syracuse, New York 13201

Preludin®
phenmetrazine hydrochloride

helps keep calories at arm's length

In one double-blind program* involving diet, close doctor/patient cooperation, exercise, posture instruction, and follow-up visits, 93 obese patients received Preludin or placebo. The drug and placebo were alternated every four weeks. This procedure lasted from 8 to 35 weeks.

Sixty-one percent of the patients lost more weight on Preludin than on placebo. In fact, they lost on average 1.9 pounds per week—almost four times as much as when they were on placebo!

For a decade Preludin has demonstrated similar results. Its effectiveness has been described in more than 300 published clinical reports involving more than 10,000 patients.

Preludin curbs appetite without excessive stimulation. It will work in your weight-control programs too.

*Barnes, R. H.: J.A.M.A. 166:898, 1958.

Preludin® tablets of 25 mg.
Endurets® prolonged-action tablets of 75 mg.
Dosage: One 25 mg. tablet two or three times daily, or one 75 mg. Endurets tablet once daily.
Contraindications: Severe coronary artery disease, hyperthyroidism, severe hypertension, nervous instability, and agitated prepsychotic states. Do not use with other CNS stimulants, including MAO inhibitors.
Warning: Do not use during the first trimester of pregnancy unless potential benefits outweigh possible risks.
Precautions: Use with caution in *moderate* hypertension and cardiac decompensation. Excessive use may result in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations, or delusions.
Side Effects: Dryness or unpleasant taste in the mouth, urticaria, and (rarely) overstimulation, insomnia, dizziness, nausea, or headache.

For details, see full Prescribing Information. 6544-III (B)

Under license from Boehringer Ingelheim G.m.b.H.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, N.Y.

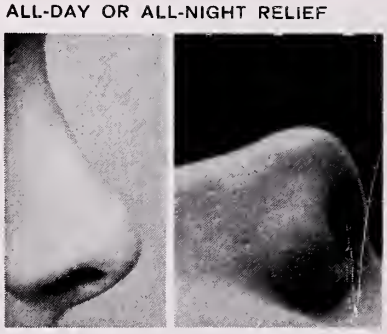
One 'Ornade' Spansule Capsule works all day (or all night) to make your patient with a cold a lot more comfortable.

'Ornade', the unique oral nasal decongestant with a drying agent, a decongestant and an antihistamine in the ideal dosage form

Ornade® Spansule® Capsules

Trademark brand of sustained release capsules

ALL-DAY OR ALL-NIGHT RELIEF



Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information in SK&F literature or *PDR*. *Contraindications:* Patients with glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal obstruction, or bladder neck obstruction. *Precautions:* Use with caution in the presence of hypertension, hyperthyroidism, or coronary artery disease; and, in patients who may operate vehicles or machinery, warn of possible drowsiness. *Note:* Since the iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake, it is suggested that 'Ornade' be discontinued one week before these tests. *Side effects:* Drowsiness; excessive dryness of nose, throat, or mouth; nervousness; or insomnia may occur rarely, but are usually mild and transitory. Other known possible side effects of the individual ingredients are: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, and difficulty in urination.

Smith Kline & French Laboratories SK&F

This space
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for
additions
to the
TUBEX
system

Only **TUBEX** offers so complete a line of closed-system injectables, and it's still growing

—no other system is safer

—no other system is more efficient

—no other system offers more convenience

—no other system assures greater patient comfort

TUBEX sterile cartridge-needle units are prefilled with measured doses. Each unit is used once, and discarded. This eliminates danger of cross contamination, as well as problems of sterilization, storage, and measurement. Ultra-sharp, siliconized needles keep patient discomfort to a minimum. No other injectable system is easier to use, easier to store, easier to carry.

JUST ARRIVED!

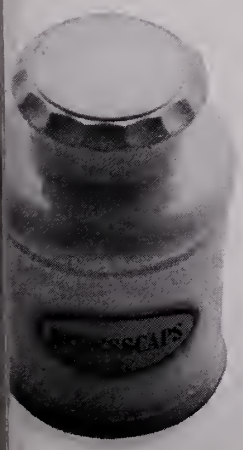
4 New TUBEX® Sterile
Cartridge-Needle Units
Vitamin B Complex with Vitamin B_{12}
Hydroxocobalamin, 100 mcg./cc.
Hydroxocobalamin, 1000 mcg./cc.
Thiamine HCl, U.S.P., 100 mg./cc.

TUBEX®

Wyeth® SERVICE TO MEDICINE

Closed Injection System
Sterile Cartridge-Needle Unit
Hypodermic Syringe
Wyeth Laboratories • Philadelphia, Pa.

in alcoholism:



B and C vitamins aid therapy. Therapeutic amounts of B and C vitamins can be important in the management of the alcoholic patient. In alcoholism, as in many chronic illnesses, STRESSCAPS vitamins aid therapy.

Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

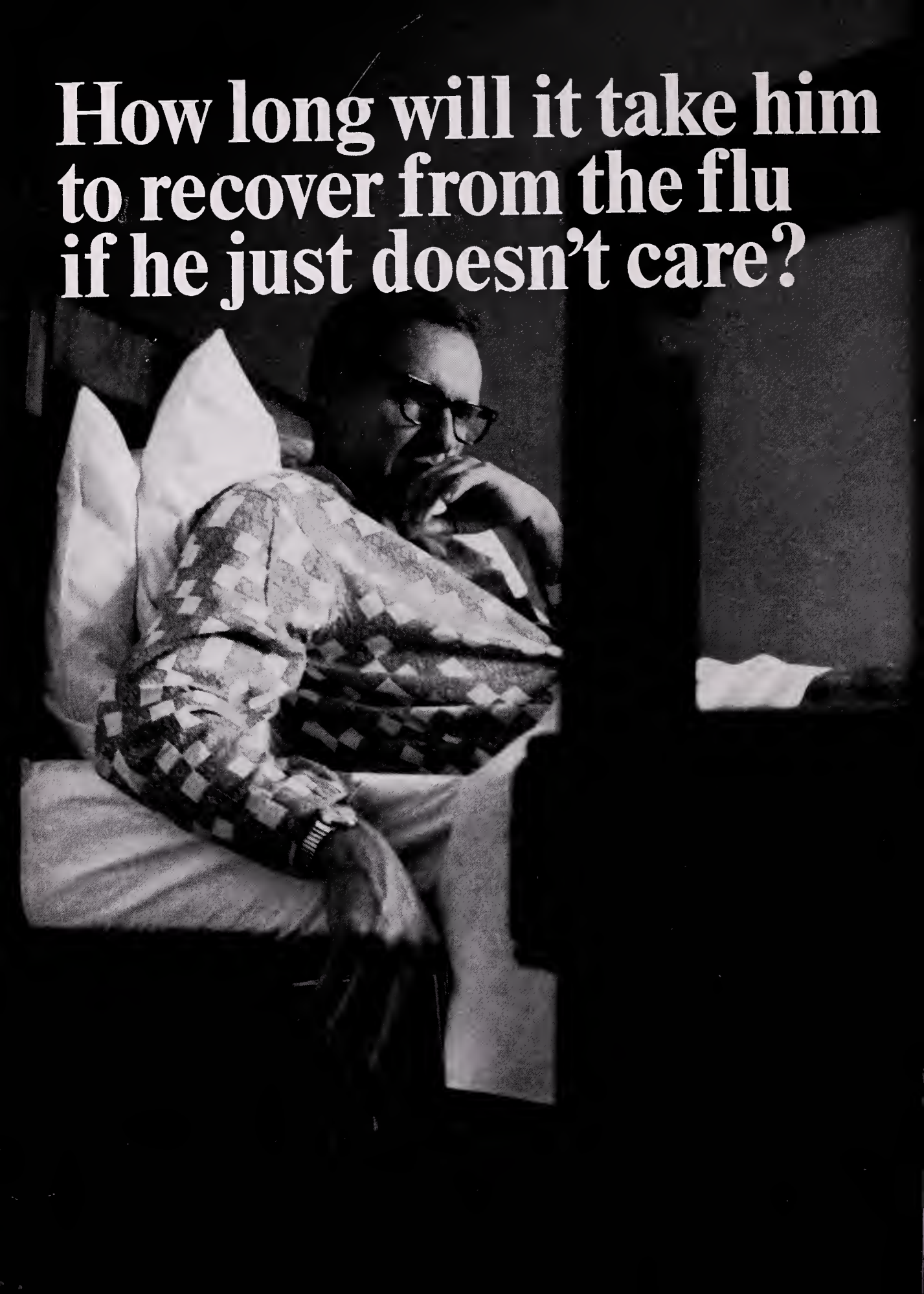
Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

691—6—3942

Lederle

How long will it take him to recover from the flu if he just doesn't care?



Does he really care? Is he alert, encouraged, positive and optimistic about getting out of bed and back to work soon?

Or is he giving in to the depressing impact of confinement?

When functional fatigue complicates convalescence, Alertonic can help...

Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that so often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

Alertonic®

Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Merrell

THE WM. S. MERRELL COMPANY
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Cincinnati, Ohio 45215

6-7907

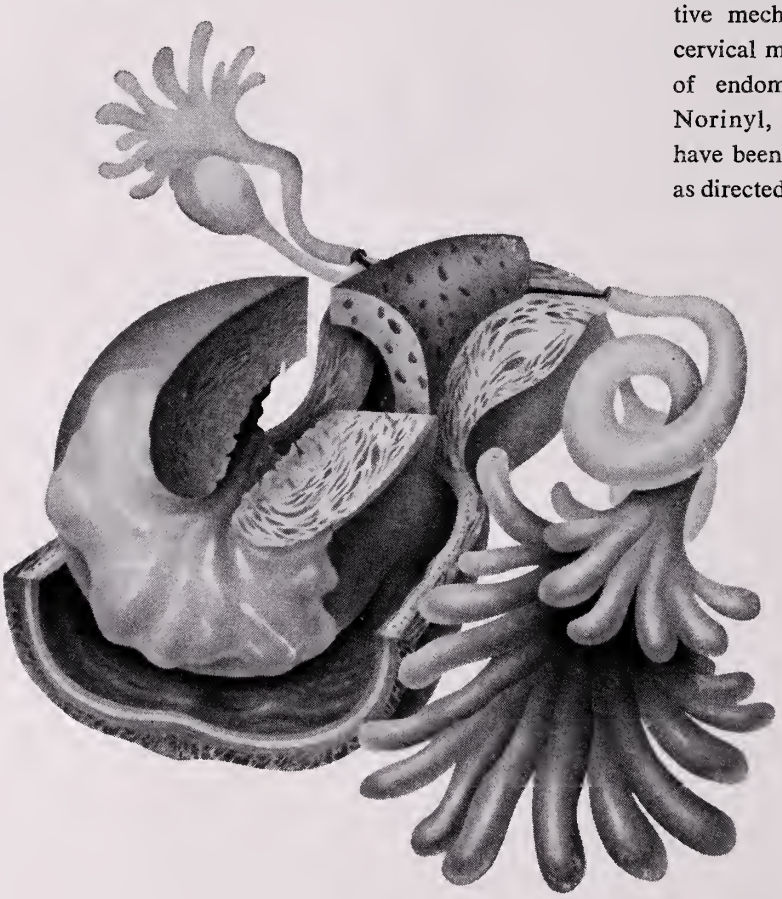
Norinyl® tablets
(norethindrone 2 mg. c mestranol 0.1 mg.)

for multiple contraceptive action that has produced a record of unexcelled effectiveness

inhibition of ovulation by means of 2 time-proved hormonal agents

production of a cervical mucus hostile to sperm motility and vitality

creation of an endometrium unreceptive to egg implantation



no unplanned pregnancies

Norinyl provides multiple action for maximum assurance of success. It does not depend on ovulation inhibition alone for contraceptive effectiveness. The mechanism of action of combined hormonal therapy results in ovulation inhibition reinforced by other protective mechanisms, including a hostile cervical mucus[1-13] and an acceleration of endometrial changes.[1-3,7-16] With Norinyl, no unplanned pregnancies have been reported to date when used as directed.

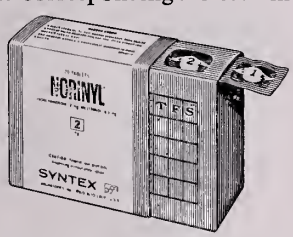
plus important supportive benefits that help her through those critical early months of oral contraception

low incidence of side effects

Low incidence of BTB and spotting, nausea and amenorrhea tends to minimize side effect problems and increases patient cooperation.

no confusion about dosage

An unbreakable "confusionproof" package makes it easy to adhere to prescribed dosage schedule: individually sealed tablets numbered from 1 through 20 *plus* monthly calendar record enables patient to double-check dosage intake by day and corresponding tablet number.



Contraindications: Thrombophlebitis or pulmonary embolism (current or past). Existing evidence does not support a causal relationship between use of Norinyl and development of thromboembolism. While a study which was conducted does not resolve definitively the possible etiologic relationship between progestational agents and intravascular clotting, it tends to confirm the findings of the Ad Hoc Advisory Committee appointed by the Food and Drug Administration to review this possibility. Cardiac, renal or hepatic dysfunction. Carcinoma of the breast or genital tract. Patients with a history of psychic depression should be carefully studied and the drug discontinued if depression recurs to marked degree. Patients with a history of cerebral vascular accident.

Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.—mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism.

Side Effects: Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

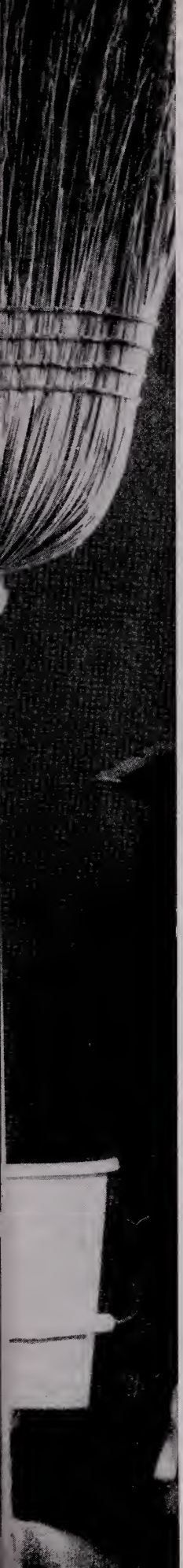
References: 1. Council on Drugs. JAMA 187:664 (Feb. 29) 1964. 2. Brvans, F. E.: Canad Med Ass J 92:287 (Feb. 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, D. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14.402 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 5) 1962. 8. Kempers, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Maqueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association. JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. I.: Appl Ther 6:427 (May) 1964. 16. Newland, D. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

norethindrone—an original steroid from
SYNTEX
LABORATORIES INC., PALO ALTO, CALIF.

Norinyl® tablets

(norethindrone 2 mg. c mestranol 0.1 mg.)

for multiple contraceptive action



Posed by professional model.

You can't set her free. But you can help her feel less anxious.

You know this woman.

She's anxious, tense, irritable. She's felt this way for months.

Beset by the seemingly insurmountable problems of raising a young family, and confined to the home most of the time, her symptoms reflect a sense of inadequacy and isolation. Your reassurance and guidance may have helped some, but not enough.

SERAX (oxazepam) cannot change her environment, of course. But it can help relieve anxiety, tension, agitation and irritability, thus strengthening her ability to cope with day-to-day problems. Eventually—as she regains confidence and composure—your counsel may be all the support she needs.

Indicated in anxiety, tension, agitation, irritability, and anxiety associated with depression.

May be used in a broad range of patients, generally with considerable dosage flexibility.

Contraindications: History of previous hypersensitivity to oxazepam. Oxazepam is not indicated in psychoses.

Precautions: Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. One patient exhibiting drug dependency by taking a chronic overdose developed upon cessation questionable withdrawal symptoms. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

Not indicated in children under 6 years; absolute dosage for 6 to 12 year-olds not established.

Side Effects: Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (morbilliform, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leukopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age.

These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever, euphoria and dysmetria.

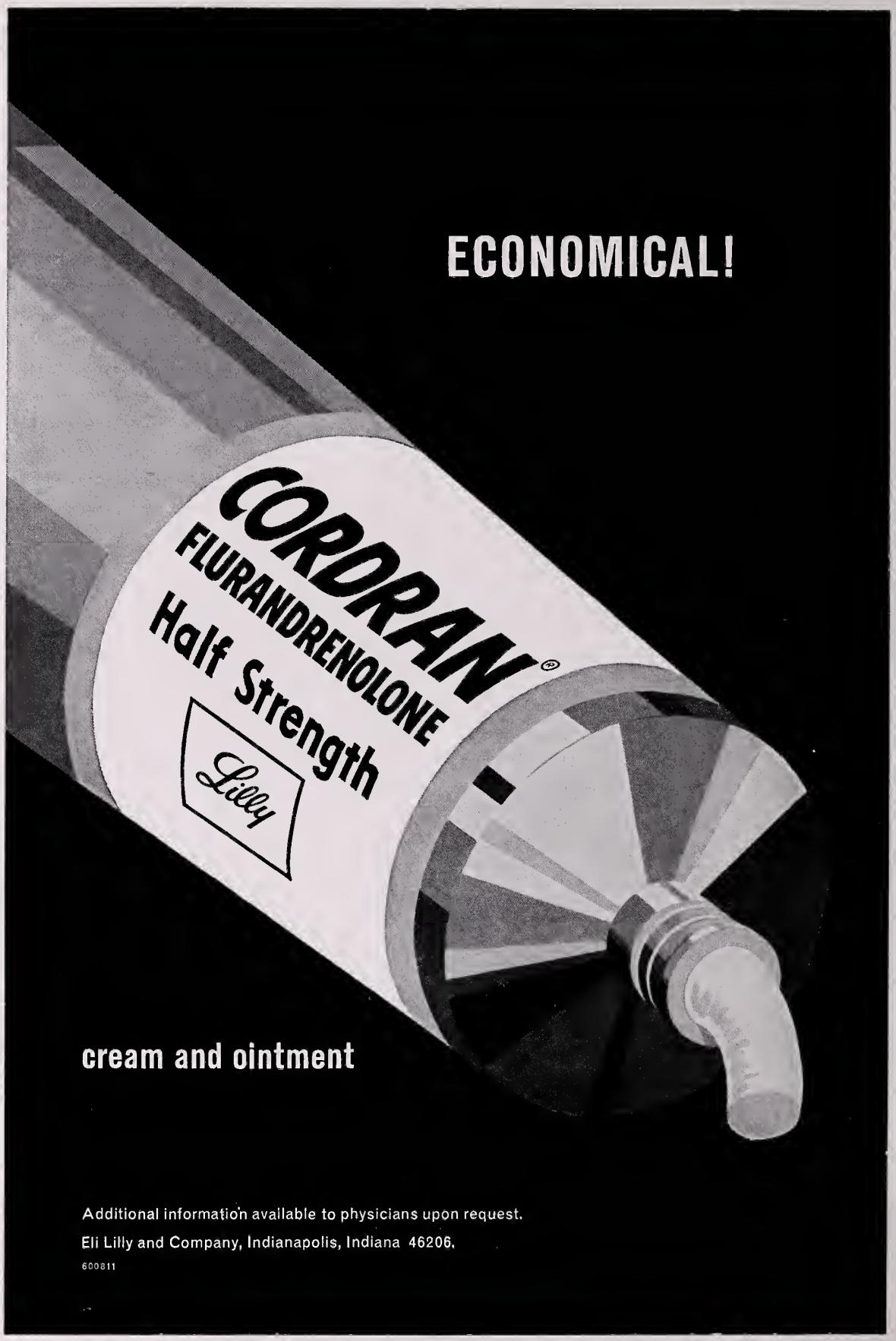
Availability: Capsules of 10, 15 and 30 mg. oxazepam.

To help you relieve anxiety and tension

Serax® (oxazepam)

Wyeth® SERVICE TO MEDICINE

Wyeth Laboratories
Philadelphia, Pa.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Half Strength
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Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.
600811

THE INCOME LEVEL below which a large segment of the population will receive free total health care under Title XIX has been decided in some states and is under consideration in others. New York has adopted an annual base of $6000 per family of four. A recent proposal of the Denver Health Department for a pilot study of federally financed, total health care for a depressed segment sets an income level based upon $7000 per family of six per year. There is great temptation for social workers and legislators to be more than generous in these poverty programs. No one wants poverty, but efforts to abolish it by spending and subsidy are fraught with great danger to the poor and, in turn, to the nation.

Utopia

There is no argument that welfare recipients beget and rear more welfare recipients. One cause is lack of education and of opportunity to move out of the cycle. Money allocated for education and job training is probably wisely spent. On the other hand, these children grow up in an environment which constantly teaches them how to get something for nothing—how to get along without working. Money providing more free benefits for more people is foolishly spent. It is naive to believe that the stimulus of education can catch up with the growth of the environment and, thereby, of problems which result from increasing the rewards for inability to be self-supporting. More and more recipients of these rewards inevitably follow. There is a limit to the proportion of its energy and wealth that a nation can expend on programs that do not produce. In our society, economic pressure is the most common incentive to production. Poverty itself arouses some to achieve, but this stimulus is dulled by promoting easy achievement and social acceptance of survival without effort.

"Ask not what your country can do for you. Rather, ask what you can do for your country!" This great appeal of the late President has been heeded by too few of his countrymen. Few dare to repeat this admonition in a local confrontation. It is a rare and brave politician who speaks against increase of benefits for the poor. It is an uncommon law-maker who can resist the political pressure for larger welfare programs.

Give-away programs of total health care to those who do not need them are financially disastrous for the Nation. Moreover, since men are as they are, they cannot succeed. Plato, when he set forth the ideal state in *The Republic,* fully realized that it was not for men. Sir Thomas More's *Utopia* was a satire about an imaginary place not to be attained by people of this earth. Our leaders, legislators, and politicians would do well to remember that Utopia is derived from the Greek *ou* meaning "no," and *topos,* "place"—"no-place"!

COLORADO'S 32ND ANNUAL WINTER CLINICS will be held in Denver February 28 through March 3, headquarters at the Brown Palace Hotel. Many attractive features and innovations have been arranged, and an exceptionally rewarding session appears to be assured. Mornings will be devoted to meetings of the House of Delegates, Reference Committees, scientific movies, and the first part of the orientation course for new members on Tuesday. Opening exercises and a program on obstetrics follow in the afternoon. A reception by the Colorado Gynecological and Obstetrical Society in the evening will honor Dr. Myron C. Waddell, President of the Colorado Medical Society. Dinner will follow for members and invited guests. A repeat of the fascinating film "Conquest of Mt. Everest" will be shown, accompanied by comments from Dick Pownall, a member of the victorious group.

Winter Clinics of the Colorado Medical Society

The speaker at a luncheon meeting Wednesday noon will be Miss Charline

Birkens, Director of the Colorado State Department of Public Welfare, upon "Government Medical Challenges." Afternoon program will include a talk "Challenges in Surgery" by Dr. William R. Waddell, Professor of Surgery at the University of Colorado Medical Center; several talks upon heart surgery will follow. The American Association of General Practice will host a cocktail party in the evening for members and invited guests. Dr. Roy F. Goddard, Chairman of the A.A.U. Sports Medicine Committee, will give an address upon Olympic Athletics and altitude adjustment of athletes.

Compac luncheon will be Thursday noon, followed by a well-diversified pediatric program in the afternoon. The evening will be free.

A unique treat is in store for Friday noon —luncheon at Larimer Square with German food, good beer, and conversation at The Bratskellar. Shuttle buses will assure a responsibility-free occasion. Following the afternoon scientific session, the Colorado Society of Internal Medicine will host a dinner meeting for all at the popular Red Slipper Inn at Cherry Creek.

There will be a Nurses Program at Fitzsimons Army Hospital Tuesday morning. And "O—yes" ski trains are poised for trips to Winter Park! Ice hockey will attract many local and visiting members Friday evening to the Arena at Denver University.

Obviously a great attendance is anticipated at this distinctive meeting. Members from all of our participating states are specially invited.

Journal Printing Returns to Denver

From July, 1964, and through the December 1966, issue the *Rocky Mountain Medical Journal* was printed by the Ovid Bell Press, Inc., of Fulton, Missouri. The change from the Publishers Press, Inc., of Denver had been made two and one-half years ago following careful deliberation. After long and loyal service by the Western Newspaper Union, later the Publishers Press, officers and trustees of the Colorado Medical Society concluded that it would be propitious to make a change. Broad experience, depth of personnel, and equipment of Ovid Bell served us well through a trying period of relatively sparse medical journal advertising —shared, incidentally, with all comparable publications in the country. From this we have successfully emerged. There have naturally been physical problems related to distance, complicated and at times expensive communications with time and geographic factors because of the press being in a remote state.

Therefore, our Publication Committee, officers and trustees of the Colorado Medical Society have gone along with the staff at its home office in the conclusion that publication now belongs "back home" in Denver. Personnel and facilities at the Publishers Press are now adequate. Efficient and enthusiastic cooperation has started and a smooth transition is taking place.

Our gratitude and appreciation are extended to Ovid Bell and his organization in Fulton. A lasting friendship has been established and we will always be grateful for the years of splendid cooperation.

Scholarships Available

Scholarships for completion of training in physical and occupational therapy are available from the National Society for Crippled Children and Adults. Under this program, scholarships are awarded to seniors in a certificate course in physical or occupational therapy or to those completing their clinical affiliations. The basis of selection is academic excellence, financial need and ability to utilize training.

The deadline for applications is May 1. For further information, those interested should write the Scholarship Coordinator, National Society for Crippled Children and Adults, 2023 W. Ogden Avenue, Chicago, Illinois 60612.

Presidential address*

Myron C. Waddell, MD, Denver

It is an honor and privilege you have bestowed upon me by elevating me to this high office. I would like to speak upon the state of the Colorado Medical Society. The AMA has been promoting the science and art of medicine and betterment of the public health since 1847; the Colorado Medical Society has been engaged in this same work since 1871. The relationship between organized medicine and public health has been excellent through the years. However, recently at the national level and in some of our sister states they have had to exert considerable pressure to keep this relationship in proper focus. We in Colorado have not had this problem and must be thankful that we have a doctor such as Roy Cleere as the head of the Public Health Department of Colorado. It is the American heritage of organized medicine that doctors take care of the sick regardless of race, color or creed and without thought of personal or monetary gain. This care has been rendered in cooperation with city hospitals and like institutions as well as in our offices. America under the guidance of organized medicine plus the free enterprise system has developed the best medical care in the world.

Social economics

There have been danger signals among the general public in this area. In my years in practice people orginally thought it was wonderful that we gave free care to the indigent and unfortunate. This passed into an era when they took this fact for granted and then into an area when it was expected. A sweet patient told me one day that doctors must take care of people in this category without charge for her taxes were too high now. We then elected a chief executive who was sure he had a mandate from the people and saw an opportunity for great power and influence in the health field along with a Congress which did their wig-wag in double time in order that no one would feel he was out of step. Together they raced across the terrain and put a law on our statutes with no thought, limited debate, and ill conceived. No force in America could stop this steamroller.

Some clown unfortunately dubbed doctors as rugged individualists. I cannot accept this as factual. A rugged individualist debates the issues toe to toe and eyeball to eyeball, stating and receiving all the facts. We as doctors look out the window or hide our heads in the sand, thus evading the issues. We do not partake in debate and often do not even listen, but go on our merry way doing as we please. This is not the posture of rugged individualism. However, I am aware that many of us will go to our professional death clinging to this false idol. Need I remind you that false idols have feet of clay?

I cannot give the Medicare law the dignity of saying it was created or it was born, but rather it was two handfuls of mud thrown against the wall, and the result came out as Medicare. When it was evident that Medicare was to be a law Dr. Paul Hildebrand and his speakers' bureau toured the state in an attempt to prepare the doctors for that which was to come. In the question and answer periods, again and again and again the answer was "We do not know yet." That is still true today. "We do not know." This bill was passed with no policies, guidelines, rules or regulations. These are made up as we go along. When we go to bed at night we do not know what rules we will be playing under tomorrow. This is the strength in the measure so far as government is concerned. However, all is not dark for there are three areas in which we as doctors can show our strength if we will lay down the mantle of rugged individualism, pull our heads from the sand, and cooperate with organized medicine.

Public Law 89-97, Title XVIII, Part A

Mrs. Martha McSteen is Regional Representative of the Bureau of Health Insurance for the Department of Health, Education and

* Delivered at First Meeting of House of Delegates, Colorado Medical Society 96th Annual Session, Sept. 25, 1966.

Welfare under this program. She is a brilliant, dedicated, understanding business woman with a pleasing personality. Mrs. McSteen is most cooperative with organized medicine in the interpretation of the rules and regulations regarding this program.

The bill clearly states that government will pay the usual and customary fees of the doctors and it also states that direct billing of our patients is acceptable. The law also states that a doctor may bill by assignment.

The third weakness is that none of the Congress realized the astronomic costs of this legislation. The President has already put in big headlines that he is going to launch an investigation into the high cost of medical care. We are sure that neither he nor the present Congress will look in the right places to find the reasons for these astronomic costs. Need I remind you they are looking down our collective throats? We as individual doctors not only have an opportunity, but a duty to send men to our Congress with fiscal responsibilities who will point out who the real culprits are in producing these rising costs. The Federal Government did not wish to pay the doctors directly, but rather through designated carriers in the different states who would do this for them. Some states have two or three carriers; we in Colorado have just Blue Shield. The Government made it clear that the carrier would be an arm of the Federal Government. The left arm in Colorado is the government arm. This is the left arm of Blue Shield. The right arm, heart and soul of Blue Shield in Colorado is the Blue Shield which we have known in the past. The House of Delegates of the AMA has recommended direct billing as the one of choice. There seems to be great confusion in Colorado for many of our doctors take assignment, and we believe this is due to our years of habit in billing Blue Shield under our own plan. Under direct billing, the patient pays the entire bill which you receipt. The patient then presents this bill to the left arm of Blue Shield which will pay him 80 per cent of the amount of the receipted bill. If you bill by assignment you receive only 80 per cent of your usual and customary fee. You may then act to collect the balance from the patient.

The Advisory Committee on Fees, chaired by Dr. Sam Childs, is attempting to learn what usual and customary fees are in the State of Colorado. It is imperative, if they are to complete their job, that you fill out the questionnaires which have been mailed to you.

I must also mention the bulletins, rules and regulations which arrive in the Executive Office by the basketful daily. It takes much of the time of at least one of our employees to wade through this morass of literature and dig out for the officers the material which they must read in order to serve you. We must have at least a speaking acquaintance with these materials in order to discuss them intelligently with Mrs. McSteen.

Part B

This is administered by our own Dr. John Zarit, who works part-time for the Public Health Department for this express purpose. Some of you may think this involves only hospitals and nursing homes, but we as doctors are also involved in this portion of the bill. The most important committee of our Society in this area is the Utilization Review Committee. Dr. Zarit has often said that he will be patient, and we would hope that he will be—very, very patient.

Title XIX

This will be administered under the Public Welfare Department. The Director of Public Welfare in Colorado is Miss Charline Birkins. This legislation must be financed by the state with matching funds from the Federal Government. Miss Birkins is now in the process of preparing materials to be presented to the Legislature which convenes early in January, 1967. Dr. Robert McKenna is representing the Colorado Medical Society on Miss Birkins' liaison committee. The programs falling in this category are Aid to Dependent Children, Aid to the Blind, Aid to the Needy Disabled, and Old-Age Assistance. It has not been determined whether the Crippled Children's and Tuberculosis programs will stay in Public Health, or be transferred into this group. The Medical Assistance to the Aged program will be phased out and discontinued.

We in Colorado were instrumental in implementation of the Kerr-Mills law. This was not implemented in all of the states. There is one area which may be troublesome in the

weeks ahead. The doctors accepted some substandard fees in this program. We understand that you, the House of Delegates, have approved a policy of usual and customary fees under all Federal programs. It is urgent that our interpretation of usual and customary fees be available to Dr. McKenna and Miss Birkins, as well as to our Legislative Council when this material is presented to the Governor and the Legislature in January, 1967. I believe a deadline of early November not to be unreasonable. We cannot and must not be put in the position of galloping about the countryside next April or May, condemning the actions of the Legislature.

Heart, cancer and stroke

Let us turn to the centers for heart, cancer, and stroke. It is clearly stated in the legislation that these centers are for educational purposes only. I will not take the time to read the exact wording of the legislation to you. We will be represented by our past President, Dr. Paul Hildebrand, on this advisory committee. We are confident that Paul will not allow this program to get out of hand.

Medical Center

We in organized medicine, I believe, are in agreement that if we are to have a medical school in Colorado we should try to make it one of the best, if not the best, in the nation. If we approach our differences with this thought in mind I believe they can be resolved without any difficulty. Medical education has gone through many changes over the years. We had an all-volunteer faculty in the beginning. Then the pendulum swung to full-time faculty to organize the departments and teach the medical students. The pendulum has swung back to where we have today volunteer faculty and faculty who spend most of their time in organizing departments and administering them, along with some private practice. This came about because many educators feel that a professor cannot teach clinical medicine in a fast-changing profession without some experience in treating the patients. A professor in the medical school today is expected to be a teacher, a researcher, and a practitioner. The pendulum is bound to swing again because no man can do all three and do them well.

The Colorado Medical Society with other units of organized medicine and in cooperation with the Medical School has developed the Preceptorship program in Colorado. We believe the volunteer faculty has a great deal to offer the medical center, and we also believe the doctors in the medical center who do private practice could render a great service to organized medicine by becoming a part of it. This interchange of ideas would make for better understanding, and both the Medical School and organized medicine would benefit. We hear the criticism that medical students are brain-washed at the University. We have also heard the criticism on Senior Day, sponsored by the Colorado Medical Society, that the medical student feels organized medicine has ignored them for four long years and cares nothing about them. The Denver Medical Society, in an effort to alleviate this situation, held a reception in the Denver Medical Library for all freshman medical students. I failed to see a great rush of private physicians at this reception. They are holding this reception again this fall and we are very hopeful that the number of private physicians attending will show an increase.

We have another project for which Dottie (Mrs. Walter) Herold, the lovely President of our Auxiliary, has taken the responsibility of implementation. She has taken on this project in addition to many others for which our greatest supporters, the Woman's Auxiliary, is taking the responsibility. Doctors in Colorado will be asked to take one medical student as their responsibility throughout his four years in medicine, and indoctrinate him into the private practice of medicine. Dean Conger and Dean Tyner are in sympathy with this project. We feel the medical center has a responsibility, being a tax-supported institution, to all areas in the State of Colorado for good health care. The Preceptorship program and this project have been undertaken in the hope that we might interest young doctors in practicing away from the medical centers and in the sparsely settled areas of our state. The physicians who enter practice in the sparsely settled areas under difficult conditions of our state away from the medical centers should be treated with deep respect, not as creatures of mediocrity. I shudder to think what would happen to the medical care

in these areas if a professor from the Ivory Tower or a high-powered specialist from one of our cities were thrust into this situation.

Blue Shield

Blue Shield is a plan developed by the State of Colorado in 1942 to assist the patients with prepayment plans to take care of their medical bills. We have a Blue Shield Advisory Committee, the composition of which was directed by this House of Delegates. They also have a Board of Trustees consisting of 13 physicians and 6 non-physicians to administer this plan. Since the inception of Blue Shield, 47 doctors have served on the Blue Shield Board which shows a rotation of approximately three or four each year. Doctors who serve on the Blue Shield Board have two areas to serve. One is the doctors, and the other is the subscriber to Blue Shield. He attempts to the best of his ability to see that both receive adequate treatment. Personally I am a great believer in the Blue Shield plan, and feel it has rendered a great service both to the doctors and to the subscribers. However, I do not feel that we have spent enough time and energy to fully acquaint the young doctors coming into practice with the full philosophy of the Blue Shield Plan. Perhaps we have not moved ahead to meet the problems as they have arisen through the years. If I am to be consistent in my belief the Colorado Medical Society should serve all of the doctors in the State of Colorado, then I must take the position that a doctor's plan should be for all the doctors in the State of Colorado who belong to the Colorado Medical Society. If this House of Delegates feels that all the unrest in regard to Blue Shield should be resolved under your directive, this can be done through your Blue Shield Advisory Committee and the Board of Trustees of Blue Shield. We will help in whatever way possible to bring this about.

Mental health

It has been my privilege to serve on the Governor's Liaison Committee in preparation of a mental health program for the State of Colorado. We have not reached an area of agreement which we can report at this time. Following a breakfast meeting with the Mental Health Committee, we may or may not have something to report.

Organization of the Colorado Medical Society

We now come to the point of discussion of our own Medical Society. The Colorado Medical Society was organized in 1871 with 25 charter members from 8 towns. It has grown to a membership of 2,777. The distribution of the doctors in the State of Colorado from rural to large cities has changed materially during these years. The type of practice has also changed. We now have more specialty organizations in the State of Colorado than we had *members* when the Society was organized. We talk about splintering of our membership. I am more inclined to believe that we have under the large umbrella failed to take care of all the doctors under different circumstances. I would like to meet with every specialty group as early as possible this year to receive suggestions as to changes in format and modalities which would better meet your needs. We are confident with your help that these suggestions can be presented to the House of Delegates at the Clinical Session for study and possible action. We are all interested in the same goals.

We in Colorado had two and now have three Delegates to the AMA. We believe nationally that they look to Colorado for leadership. This is attested by the fact that we have a number of physicians serving on the AMA Councils and Committees: Dr. I. E. Hendryson, on the Board of Trustees; Dr. Kenneth Sawyer, Sr., Vice-Chairman of the Council on Medical Education; Dr. Robert Elliott, on the Medical Facilities Committee; Dr. Monroe Tyler, on the Council on Rural Health; Dr. Oliver K. Niess, on the Council on National Security; Dr. George Tyner, Alternate Delegate to the Section on Ophthalmology; Dr. Walter Vest, Consultant for the Committee on Aging; Dr. Robert Virtue, Chairman of the Section on Anesthesiology; Dr. Henry Swan, on the Archives of Surgery. Recently Dr. John Farley was on the Council on Legislative Activities, and Dr. Sam Newman was Chairman of the Committee on Osteopathy.

This has not come about by accident. Colorado has sent our Delegates, Alternates and officers to the Annual and Clinical Sessions of the AMA. Each member of the delegation is assigned to a reference committee. The

delegation holds a caucus and they speak for or against matters before the reference committee by direction of this caucus. These often are carried in debate to the House of Delegates. I truly believe this interest and active participation are the reasons so many doctors from Colorado have gained this recognition. Our workday ends sometime between 10:30 p.m. and midnight! This continues throughout the entire meeting. It would be most interesting to see what would happen in the Colorado Medical Society if this much interest and enthusiasm were shown.

You, the House of Delegates, are our governing body. You present to your officers, Councils and committees your policies and projects for implementation. These are the policies of the Colorado Medical Society. At the present time information is disseminated to our membership by way of the *Rocky Mountain Medical Journal* and *Colorado Medicine,* and Dr. Hildebrand started in 1966 the Delegates Letter. The thought behind the Delegates Letter was to give the Delegates from the component societies more responsibility in assisting the officers of each component society in carrying out the policies and projects of the Society.

The Board of Trustees

The Board of Trustees is the fiscal agent and the caretaker of the funds of the Society. It also acts for the House of Delegates between sessions of the House. A prepared agenda is mailed to the members of the Board of Trustees a week prior to each meeting. They have an opportunity to study the agenda and matters to be discussed in the meeting. They come prepared to meet the issues, debate and resolve them. They are not loath to make decisions. Their dedication to duty has been most impressive to me. I would want to congratulate the House of Delegates upon their selection of the members of the Board.

The Councils

These are administrative and carry out the mandates of this House of Delegates by way of their committees. Your officers and Executive Office are charged with coordinating the activities of the Councils and their committees, and to represent you and carry out your policies throughout the year.

The Executive Office

It has been my privilege to visit the Executive Office frequently during the past twelve years. In fact, in the past three years I have either been in the office or in touch with it nearly every day by telephone. From this vantage point I have made these observations: Mr. Donald Derry, our Executve Secretary, has done an outstanding job for the Society in his first year in office. We are now working many of the girls in this office until 6 or 7 o'clock at night all too often. We then ask them to return to give secretarial service to meetings of Councils and committees. We feel this is a necessary service if we are to function properly. The great loyalty of these girls to Don Derry and the officers of the Colorado Medical Society is all that keeps them in our employ. I do not believe we can expect this dedication to continue. In fact, I believe we are taking undue advantage of their loyalty. With more programs than ever before in the history of the Colorado Medical Society, and the heavy load dumped on this office by Medicare, our number of employees is the lowest it has been since 1953. In our study of the Councils and the committees it became apparent to us that we gave them great responsibilities with no funds to carry out these responsibilities. We have asked the Executive Office if it would get budgets from all Councils and their committees. The responses were 100 per cent which indicates that they also feel this need. It became apparent when these budgets were presented that the Board of Trustees did not have sufficient funds to meet them.

Your Medical Society some five years ago raised $80,000 from a special assessment. This money has been judiciously spent through the years but it is now depleted. However, judicious use of these funds by the Board of Trustees kept the Medical Society out of the red.

We urge all members of the House of Delegates and of the Colorado Medical Society to attend the Reference Committee meetings. We hope that you will present your views, debate the issues, and rid yourselves of all hostilities. Then you return home at peace with the world and ready to support your Society.

Your President-elect could not do the job alone if you paid him $100,000 a year. If you want to move ahead and do the job that needs to be done, we hope you will supply adequate funds to the Board of Trustees so they can take care of the budgets of Councils and committees, enabling them to proceed with efficiency and dispatch, and that you will give the Board of Trustees sufficient funds so that the Executive Secretary may hire the necessary personnel to do the job you expect. We then ask every member of the Society to give full support to Councils, committees and officers in their efforts to carry out your programs. The satsfaction of progress and accomplishment is ample pay for your elected officers. I will represent the Colorado Medical Society in all matters as you direct, approaching the job ahead with great enthusiasm and confidence. We will resist all efforts by government and other pressure groups to interfere with your right to practice quality medicine. I will proceed with great force and tenacity—with diginity and utter humility! •

Rhesus immunization complicating pregnancy

Glenn A. Gryte, MD, Boulder, Colo.

This brings attention to an interesting clinical syndrome which, though previously reported, is not widely recognized.

When pregnancy is complicated by severe rhesus immunization there can be an associated maternal syndrome. This pre-eclamptic like condition complicates the management of an already difficult problem and produces an ominous outlook for the fetus.

Report of a case

The patient (K. T.) is a 24-year-old caucasian Rh negative mother with a homozygous husband; gravida iv, para ii, ab i. The patient's first pregnancy in 1961 resulted in a delivery of a 7 lb. 5 oz. normal male infant. The patient also had a first trimester abortion that year. In August, 1963, the patient was delivered of an edematous, pale 9 lb. 5 oz. male infant at 41 weeks which was transfused, survived and continues to be a healthy child. The prenatal course of this third pregnancy was uneventful.

At 36 weeks there was a negative titre with a positive Coombs reported. Six weeks postpartum the titre was again negative. The initial titre of the fourth and present pregnancy taken at about 4 month gestation was 1:64. Beginning about 28 weeks there was a rapid increase in weight gain, edema, albuminuria and hypertension. Polyhydramnios was present. Abdominal amniocentesis done at about 31 weeks revealed a severely affected infant. The absorption curve was peaked at 450 mu. Since it was expected that the pregnancy would be terminated on the basis of pre-eclampsia, it was considered unwise to subject the mother and baby to risk of fetal transfusion, and delivery was planned at 33 weeks. However, spontaneous labor began at 32 weeks and the mother was delivered vaginally of a hydroptic 5 lb. 2 oz. male infant with ascites, hepatomegaly and splenomegaly, who expired shortly after delivery. The placenta was large, pale, friable and retained. Ten days postpartum the patient had lost 33 pounds, a trace of albumin remained but there was essentially no edema. The patient became normotensive after 4 weeks.

Discussion

As in this case the maternal syndrome of a pregnancy complicated by a severely isoimmunized infant resembles pre-eclampsia. Certain atypical features are present however. The condition has an acute and early onset, marked edema mostly confined to the lower extremities, considerable albuminuria (3-5 grams daily in this case) and hypertension. Eclampsia is seldom encountered in spite of the severity of the condition. Another feature is the inevitability of fetal death.

The etiology of the syndrome is probably related to increased trophoblastic activity as supported by the large edematous placenta. A review of the clinical features of this syndrome involving a series of cases is presented in the Journal of Obstetrics and Gynecology of the British Commonwealth, 1963. •

Thoracic outlet syndrome*

David B. Roos, MD, Denver

Diagnosis and management are lucidly presented by the author of a new surgical approach.

NEUROVASCULAR COMPRESSION in the shoulder has long been recognized as a common clinical problem causing distressing symptoms in the upper extremities. Unfortunately, it has been fragmented into so many different "syndromes" that confusion and disagreement over the mechanism of compression has led to misunderstandings, lack of accurate diagnostic measures, general suspicion of the problem (and the patient), and often ineffective treatment.

The separate syndromes of scalenus anticus, cervical rib, costoclavicular, hyperabduction, first rib, pectoralis minor, fractured clavicle, effort vein thrombosis and cervicobrachial neurovascular compression were combined into the single entity called thoracic outlet compression syndrome by Rob in 1958[1]. By concentrating on the region involved, rather than trying to determine the exact mechanism of compression, clinicians began to see and discuss the general problem more clearly.

In 1962 Clagett emphasized the basic importance of the first thoracic rib as the denominator common to all thoracic outlet compressions, as the clavicle, scalene muscles, cervical ribs and bands all involve the first rib in compressing the brachial plexus and subclavian vessels[2]. Clagett's recommendation of removing the first rib to decompress the neurovascular bundle in the thoracic outlet offered uniform and reliable relief for the first time.

Symptoms

Brachial plexus compression causes pain, numbness, dysesthesias, weakness, heaviness and clumsiness of the upper extremity. The pain may radiate in all directions from the point of compression in the thoracic outlet, medially up the neck, laterally across the shoulder and down the arm, anteriorly into the chest, and posteriorly to the scapula. Dysesthesias radiate into the hand in various patterns, involving the whole hand in some patients or isolated in the lunar, radial or, rarely, the median areas in other patients. The extremity may be weak and clumsy performing activities requiring fine coordination, such as writing, typing, sewing, using tools or playing musical instruments[3].

Subclavian artery compression causes arterial insufficiency of the hand with coolness, pallor, tingling, fatigue and occasionally muscle cramps. Severe insufficiency may lead to Raynaud's phenomenon with vasospasm, cold, blue or white fingers sensitive to cold with occasional finger tip ulceration[4]. Subclavian vein compression may cause edema of the fingers, venous engorgement and, in severe cases, thrombophlebitis of the axillary or subclavian vein.

The arm tires quickly and feels heavy. All symptoms are aggravated by using the extremity in the elevated position — combing hair, hanging clothes, reaching, holding a steering wheel or tools, painting and ironing. Symptoms difficult to explain on an anatomic basis are not unusual, and include severe ipsilateral headaches, pain radiating into the ear, eye pain or pressure, and facial numbness or tingling. These, as well as the more classical symptoms, will clear after relief of the outlet compression. Physicians unfamiliar with the protean symptoms seen in thoracic outlet syndrome often assume the complaints are functional.

Symptoms are usually worse after, rather than during, strenuous arm activities, and may be maximal at night. Patients with the syndrome often awaken with the arm "asleep", numb and aching. They may get up, shake and rub the arm, pace the floor, apply heat and require pain medication for relief. Once established, symptoms may gradually

* From the Department of Surgery, University of Colorado School of Medicine, Denver. The author is Clinical Instructor in Surgery.

progress, and the measures offering relief originally later become ineffective.

Signs

Demonstrating neurovascular compression in the thoracic outlet as the cause of the patient's complaints is the most reliable means of diagnosis. The physical signs may also be divided into neurologic and vascular groups.

A patient with typical thoracic outlet syndrome will develop many of his usual symptoms by thumb pressure over the brachial plexus. There is tenderness to touch and tapping on the involved side, weakness of grip, weakness of triceps and often interosseous hand muscles (ulnar nerve), and diminished pin-prick sensation in the ulnar or radial area of the hand. Reflexes are normal, and muscle atrophy is rare.

Vascular signs to confirm outlet compression include exercising the forearm muscles against an arterial occlusion in the thoracic outlet by placing the arm in the 90° abduction-external-rotation (AER) position and opening and closing the hand rapidly. An involved extremity will usually collapse in the lap within 60 seconds with severe fatigue, pain, dysesthesias and sometimes waxy pallor of the hand, whereas an uninvolved extremity will exercise one to two minutes with little distress. Other tests indicating subclavian artery compression are the following: lowering of the blood pressure 15 mm. Hg. or more, and diminution or loss of radial pulse, both tests being performed with the arm in the 90° AER position; back-bracing the shoulders in the military posture and drooping the shoulder with a downward pull of the arm causing a decrease of volume of radial pulse. The popular and classical "Adson test" has been found to be unreliable in testing outlet compression.

Other observations should be made during careful examination. Fullness in the supraclavicular fossa of the involved side, tender and tight neck muscles, venous engorgement, impaired emptying of hand veins on elevation or shoulder-bracing, subungual splinter thrombi, finger tip or paronychial ulceration, or muscle atrophy may occasionally be noted.

When the arm is placed in the 90° abduction-external-rotation (AER) position, the clavicle swings posteriorly narrowing the costoclavicular space. This is the position of greatest neurovascular compression in most patients with the outlet syndrome and explains their greatest distress on elevated use of the extremity. Because patients with severe symptoms often feel such discomfort in this position, they may voluntarily or involuntarily elevate the shoulder to open the costoclavicular space thus relieving the pressure on the plexus and subclavian vessels. The vascular findings, especially the pulse, may therefore be quite normal if the shoulder is not completely relaxed. This explains why pulse, blood pressure changes and subclavian bruit are sometimes actually better demonstrated on the side with milder symptoms. The patient must be encouraged to relax the shoulder for the elevation tests if the tests are to be valid. Undo emphasis should not be placed on pulse changes, and indeed, it is not unusual for patients to have strictly neurologic symptoms and signs, with no vascular component to their outlet syndrome, and still be so severe that they require surgical relief.

Two determinations are of paramount importance. (1) Does the patient have neurovascular compression in the thoracic outlet? (2) If compression is found, is it the cause of the patient's complaints? Twenty to forty percent of asymptomatic people may have evidence of outlet compression, so the chance occurrence of outlet compression along with other causes of neck, shoulder and arm symptoms will be encountered.

Ancillary Tests

A complete cervical spine x-ray series should be obtained in every patient with significant symptoms suggestive of thoracic outlet syndrome. One should look for cervical ribs; elongated C-7 transverse processes which may have a non-ossified cervical band running from the tip of the process to the first rib (abortive cervical rib); fractured clavicle callous; congenital or developmental abnormalities of the first rib; tumor invading the thoracic outlet; degenerative cervical arthritis; osteophytes narrowing neural foramina; or narrowed cervical discs. Studies of cervical spine are usually normal in thoracic outlet syndrome, but they are an essential aid in differential diagnosis.

Mercury strain gauge plethysmography[5], which offers a highly sensitive measure of pulse volume, has been adapted by the author in evaluation of the outlet syndrome. A tracing of pulse volume is obtained with the patient's hand resting in the lap and com-

pared to the pulse volume with the arm elevated in the 90° AER position. In a normal subject, the pulse volume in the 90° AER position is significantly *increased* over the hand-in-lap pulse volume. In patients with subclavian artery compression, the tracing shows *reduction* or complete loss of pulse volume in the 90° AER test position. Plethysmography gives an objective evaluation and recording of the pulse, and it is far more accurate than subjective palpation. Again it must be cautioned that evidence of subclavian compression does not prove the patient has the syndrome, unless his usual symptoms develop at the time the compression is demonstrated. Also, the patients with a pure neurologic outlet syndrome with no vascular component may have a normal plethysmogram. Plethysmography is not essential to make the diagnosis, and must be carefully interpreted along with the other tests mentioned above. Aortograms, myelograms, and electro-myograms are usually unnecessary, but may be helpful in unusual or difficult cases.

Differential Diagnosis

There are many causes of pain in the neck, shoulder and arm, some of which will also cause weakness, numbness and tingling. Careful differentiation of the exact cause is mandatory if treatment is to be successful.

Carpal tunnel syndrome is strictly median nerve compression involving palm, thumb, index and long fingers with pain and dysesthesias, though pain may radiate proximally to the shoulder. A positive Tinell's test and 90° wrist flexion test to reproduce the exact symptoms is diagnostic.

Cervical arthritis causes grating and symptoms on neck movement rather than arm position, and usually shows well on x-rays. *Ruptured cervical disc* will cause severe central root pain, usually C5-6 or C6-7 (radial) distribution, almost never C8, T1 (ulnar) distribution, and may show narrowed disc spaces by x-ray. Reflexes may be affected, and symptoms may be precipitated by neck motion, coughing or sneezing. The pain is reproduced by tilting the head back and to the side and having the examiner press downward on the forehead.

Tendonitis, capsulitis, shoulder arthritis, myositis and *fasciitis* cause localized pain and tenderness. *Brachial plexus injury* will have a definite history of trauma and often shows shoulder girdle muscle atrophy. Invasive *tumor* in the thoracic outlet can usually be palpated and demonstrated on chest x-rays. Other conditions that may simulate the outlet syndrome such as *spinal cord tumor, multiple sclerosis* and even *angina pectoris* can be differentiated by appropriate tests. None of these conditions, however, has symptoms and signs of both neurologic and vascular compression related to arm position and use.

The importance of the differential between the outlet syndrome and angina pectoris was unappreciated until the author saw five patients during a four month period who had been diagnosed and treated for heart disease for years. Finally a re-evaluation disclosed conclusive evidence of thoracic outlet syndrome with no proof of coronary artery disease. Two of these cases will be presented, as this problem has not been generally appreciated previously.

CASE REPORTS

Case 1: I. R., a 39-year-old rancher, was told four years ago he had severe coronary artery disease because of left chest, neck, head, shoulder and arm pain that developed during heavy work and at night. He had not been allowed to do physical work on his ranch for the past four years and could not afford to hire help. He was recently referred to a cardiologist for evaluation, and no evidence of cardiac disease was found. Careful history disclosed the symptoms developed only with the use of the arms, especially in the elevated position, such as lifting bales of hay and painting, and were accompanied by numbness and tingling of the hand, marked heaviness and fatigue of the arms, left greater than right. Night pain was often severe, causing him to pace the floor. He had to sleep on his abdomen, as his arms and hands would "go to sleep" if he slept on his back or side. Incidentally, he gave a history of a muscle cutting operation at the right base of the neck several years ago that partially relieved pain, fatigue, numbness and tingling of the right arm, but these symptoms had recurred recently.

Physical examination disclosed a very cheerful, heavy set, muscular male in apparent excellent physical condition. Positive findings showed radial pulses strong and equal with hands in lap, but the right absent at 90° AER, the left at 80° AER with subclavian artery bruits in the infraclavicular fossa at 80° AER right, and only 45° left. Blood pressure was 140/80 on right and 94/60 on left with arms at side; blood pressure was not detectable in the 90° AER position bilaterally. Supraclavicular thumb pressure test was tender bilaterally with radiation of usual aching pain, up the neck to the ear, down the chest and arm on the left with numbness and tingling in the hand. There was no radiation on the right. Elevated arm exercise test

caused left arm pain in 15 seconds, both hands numb at 20 seconds and both arms collapsed in the lap at 50 seconds from marked fatigue, pain and dysesthesias, the left hand being quite pale. Adson test was negative. Left triceps and interosseous muscles were weaker than right, and pin-prick sensation was dull on the dorsum of both hands. The patient had a well healed old surgical scar in the right supraclavicular fossa.

X-rays showed a large right cervical rib, and a prominent C7 transverse process on the left with no cervical rib. Neural foramina and disc spaces were normal. Plethysmogram showed a classical tracing of a patient with thoracic outlet syndrome, with marked compression of the subclavian artery in the thoracic outlet in the 90° AER test position. (Fig. 1.)

Course: The patient underwent surgical decompression of the left thoracic outlet by first rib resection through the axillary approach. He had an uneventful postoperative course and returned to his ranch on the fifth postoperative day. Follow-up shows total relief of all pain, numbness, tingling, fatigue and weakness on the left. Two months after operation he was working full time on his ranch with no physical restrictions of any type. His left upper extremity is asymptomatic, even after a hard day's work, but the right still aches and "goes to sleep." He plans to return after the harvest to have the same procedure performed on the right side. All tests on the left had returned to normal including the weak triceps and interosseous muscles and pin-prick sensation. His plethysmogram is normal postoperatively on the left, unchanged on the right. (Fig. 2.)

Case 2: A. M., a 41-year-old housewife and insurance clerk, developed left chest pain 17 years ago, immediately following a three-week vacation touring the West during which she did all the driving. Her physician told her she had "heart trouble" and prescribed nitroglycerin and digitalis, which she has taken regularly ever since. In recent years she developed left posterior neck pain, shoulder and scapular pain with headache. X-ray two years ago showed a cervical rib. During the past year the left arm had become weak, heavy and painful, especially when used in the elevated position doing up her hair, hanging drapes and typing. After heavy spring house-cleaning, the left arm became numb and swollen so she could not wear gloves or remove her rings. She slept poorly due to aching in the left neck, shoulder and arm, and was often awakened by the left arm being "asleep." She has been asymptomatic on the right.

Physical examination showed a well developed and nourished, alert, cheerful woman who weighed 128 pounds. There was a hard palpable, very tender nodule in the left supraclavicular fossa. Thumb pressure over this area immediately brought on her usual left chest and shoulder pain with numbness in the hand. The right supraclavicular area felt normal. Radial pulses were strong bilaterally in all positions except the military posture which weakened the left pulse. Adson test was negative. Blood pressure was 122/80 right side and 124/80 left, with arms at the sides. With the arms in the 90° AER position, the blood pressure was 96/60 right, 100/70 left. No subclavian bruit was heard on either side. The elevated arm exercise test

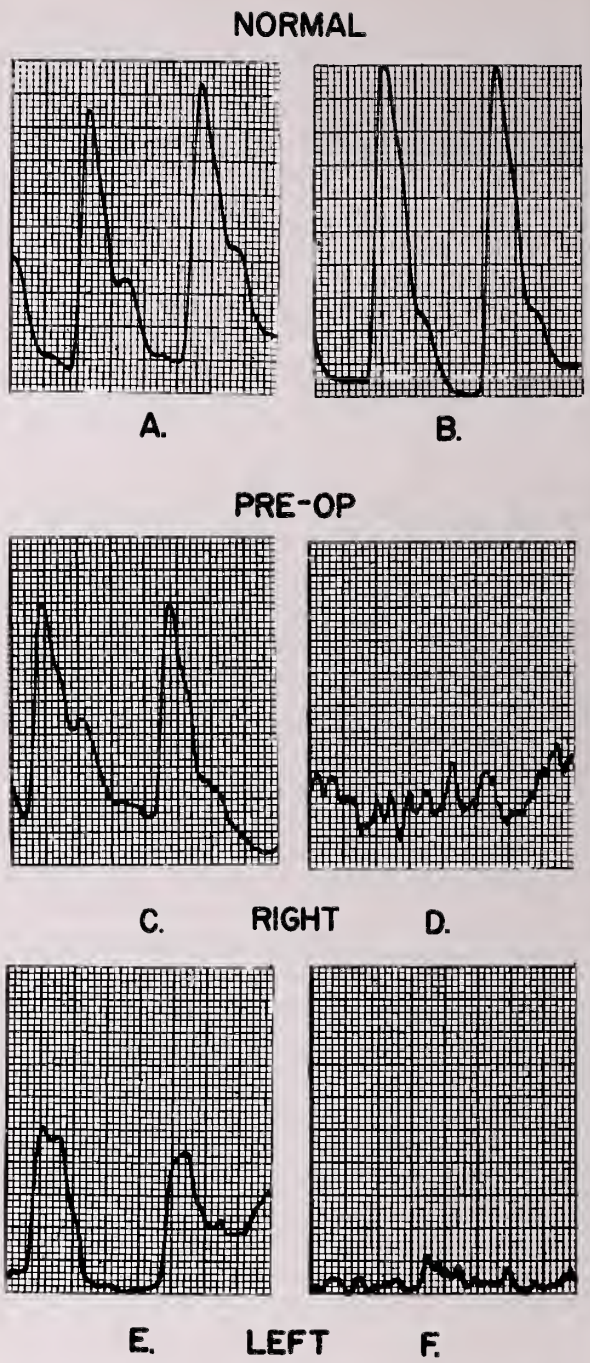

Fig. 1. Mercury strain gauge plethysmogram measuring pulse volume in the finger. A., Normal subject in sitting position, hand relaxed in lap. B., Normal subject, arm in 90° abduction-external-rotation (AER) position, showing normal increase of pulse volume with arm elevated. C., Patient I. R., right hand in lap. D., I. R., right arm in 90° AER position, showing complete loss of pulse volume from marked compression of the subclavian artery in the thoracic outlet. E., I. R., left hand in lap. F., I. R., left arm in 90° AER test position, showing total loss of pulse volume, a classical tracing of a patient with marked thoracic outlet compression.

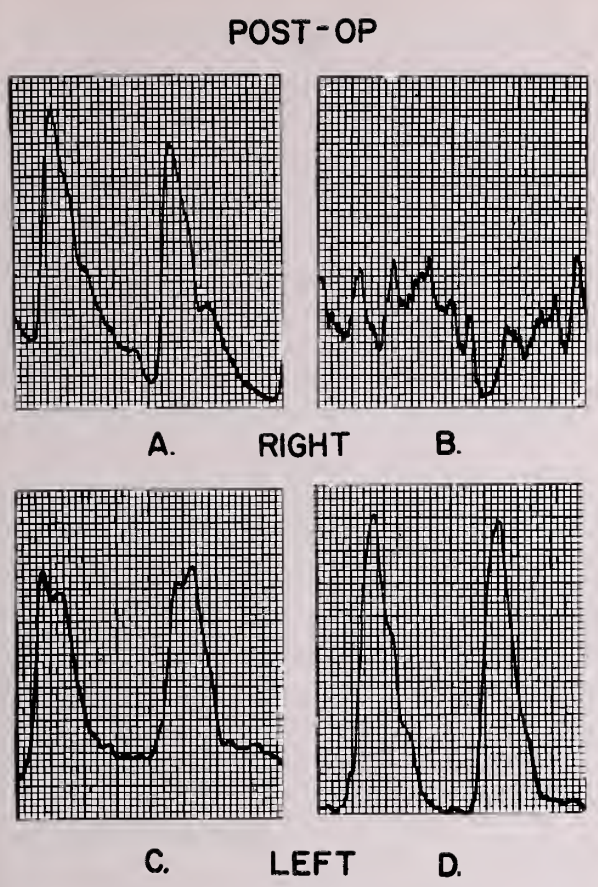

Fig. 2. Mercury strain gauge plethysmogram. Tracings obtained after decompression of left thoracic outlet by first rib resection. A., I. R., right hand in lap and B., right arm in 90° AER, no change. C., I. R., left hand in lap. D., left arm in 90° AER, marked post-operative change, now normal.

caused no symptoms at all on the right, but the left became tired at only 15 seconds, developed her usual left neck, scapula, shoulder and arm pain at 30 seconds, and the arm collapsed in her lap at 60 seconds with marked heaviness, fatigue, pain and dysesthesias. Neurologic tests showed marked tenderness of the left brachial plexus to tapping. The left interosseous muscles (ulnar) were slightly but definitely weaker than the right, as was the left triceps. Reflexes were normal.

X-rays showed a small left cervical rib and markedly enlarged right C7 transverse process. Plethysmogram was completely normal. Cardiology consultation revealed no evidence of cardiac disease. It was felt she represented a typical example of pure neurologic thoracic outlet syndrome with no vascular component, originally precipitated by the trauma to the arm of driving steadily for three weeks, 17 years ago.

She underwent surgical decompression of the left thoracic outlet by first rib resection through the axillary approach. The cervical rib was felt at operation but left undisturbed as it was less than one inch long. She had an uneventful post-operative course with total relief of her pain, numbness and tingling. She returned to work one month after operation completely recovered, and taking no medication.

Three other similar cases originally diagnosed as cardiac disease have been seen who were found to be typical thoracic outlet syndromes without evidence of coronary disease. They, too, have been totally relieved of their left chest, neck, shoulder and arm pain, numbness and tingling by surgical decompression of the thoracic outlet by first rib resection. This is certainly not to suggest all such symptoms are always caused by the outlet syndrome. In patients with these symptoms who do not have evidence of myocardial disease, however, tests for neurovascular compression in the outlet should be performed. It may be a serious error to label and treat a patient, usually in their thirties or early forties, as a cardiac with all the anxiety, fear and financial problems that may follow, when in reality the patient has a perfectly benign, easily correctable outlet compression syndrome.

Onset

Thoracic outlet syndrome may develop spontaneously or be precipitated by trauma. The spontaneous group of patients are usually in their twenties or thirties, are usually thin women or muscular men, with women predominating three to one.

Any trauma causing a sudden "jerk" of the neck muscles may precipitate the typical symptoms of thoracic outlet syndrome—a fall on the shoulder or neck, a blow in the supraclavicular area, prolonged use of the arm in an elevated position, or, as has been seen most frequently, a so-called "whip-lash" injury. The neck pain and headache develop almost immediately and persist, but the arm symptoms of pain, heaviness, weakness, numbness and tingling may be delayed, coming on gradually over a period of days, weeks or even a few months. The outlet syndrome probably results from the spasm of the scalene muscles (commonly seen after a "jerking" neck injury) which may hypertrophy over a period of time causing crowding and compression of the neurovascular structures in the outlet; or through constant spasm, elevating the first rib and thus narrowing the costoclavicular space. Again, the vast majority of symptoms following neck injury are *not* caused by the outlet syndrome; but if patients develop typical thoracic outlet compression symptoms and signs, they should not be ignored. The outlet symptoms may progress as the neck,

back and head pain subsides under conservative treatment. These resistant and often severe outlet symptoms have been found to be relieved dramatically by surgical decompression by first rib resection.

The post-traumatic group of patients have varied from the 'teens to the fifties. In over 300 patients with thoracic outlet syndrome examined by the author, no patient has been seen who developed the syndrome over age 55. It is a syndrome of young and middle aged adults. Patients who first develop symptoms suggestive of thoracic outlet syndrome over age of 50 are usually suffering from degenerative cervical spine disease.

Treatment

Patients with mild symptoms of arm fatigue with occasional numbness and tingling of the hand require no treatment. If pain becomes a significant complaint, and impairment of daily activities develops, conservative measures may be beneficial, particularly if begun early in the course of the syndrome. These measures include improving posture; shoulder girdle strengthening exercises which encourage carrying the shoulders somewhat elevated to open the costoclavicular space; avoiding arm use in the elevated position; rest; heat; massage; muscle relaxants; ultrasonic treatments to relax spastic neck muscles; and pain medication to promote sleep. Results with conservative treatment are often disappointing, however, especially in patients with severe symptoms or complications of the outlet compression, such as ischemia of the hand, Raynaud's phenomenon, emboli, subclavian aneurysm or thrombophlebitis, muscle atrophy or sympathetic dystrophy. If conservative treatment does not offer early relief, surgical decompression of the outlet should not be delayed, because it is capable of bringing an abrupt end to the problem with minimal risk and rapid recovery.

Since the first thoracic rib is the common denominator in producing compression, usually by a scissor effect with the clavicle, removing the first rib, the lower blade of the scissor, allows the plexus and vessels to drop so the clavicle has no hard surface against which to trap these structures. Removing the first rib results in no disfigurement, weakness or deformity.

Scalenotomy[6] can no longer be recommended, even as a first-stage or "trial" operation, because its failure rate is too high (60% at the Mayo Clinic, according to Clagett), a significant number of complications result, and removal of the first rib offers far more reasonable and effective relief.

Originally the first rib was removed through the supraclavicular approach[7, 8]. Exposure was so limited that only a small part of the rib could be resected, and damage to the plexus and major vessels was relatively common. It is no longer recommended. Clagett advised complete removal of the first rib through the posterior parascapular approach, a modification of the classic thoracoplasty. This offers excellent relief, but again exposure is limited, especially anteriorly near the subclavian and innominate vein, and it leaves a long prominent scar.

Recently a new surgical approach through the axilla for extrapleural resection of the first rib has been reported[9]. This procedure offers clear exposure of the rib, plexus and vessels; short operating time; minimal blood loss; complete resection of the entire rib; minimal postoperative discomfort; and a small hidden scar.

Results

Over 300 patients have been referred for evaluation of thoracic outlet syndrome. Of these, 130 extremities in 110 patients had severe symptoms causing marked distress or impairment of usual activities, failed to respond to conservative measures, and underwent surgical decompression by the author, using the axillary approach.

Ages ranged from 17 to 71, the majority (89%) being between 20 and 50, only one patient being over 55, a 71-year-old lady. Of the 110 patients, 82 (74.5%) were women and 28 (25.5%) were men.

Of the 130 extremities operated on, 73 were the right side and 57 were the left, twenty patients having bilateral operations separately. Seven patients had cervical ribs, and of these, only two cervical ribs were removed. All seven obtained total relief of symptoms from operation.

One hundred twenty of the 130 extremities had surgical decompression for predominantly neurologic symptoms of pain and dysesthesias. Ninety-four (78.3%) had an excellent result with total relief of symptoms; 18 (15%) had a good result with only occasional mild aching or tingling at times; six (5%) had a fair

result with some improvement but significant symptoms remaining; and two (1.7%) had a poor result with no essential change of symptoms. Thus, in the neurologic group of patients, 93.3% of the extremities operated on obtained total or marked relief, and 6.7% were little benefited. This success rate apparently reflects a clear understanding of neurovascular compression in the shoulder, precise diagnostic tests to confirm the diagnosis, careful selection of patients who might benefit from operation, and a surgical procedure well suited to relief of thoracic outlet syndrome for patients who fail to respond to intensive conservative treatment.

Ten extremities underwent first rib resection for predominantly vascular symptoms. Five had total relief; two had a good result; two, a fair result with only slight improvement; and one failed, showing no change. This represents a 70% success rate, well below that achieved in the neurologic group. The three who obtained little benefit were all advanced Raynaud's phenomenon with finger tip ulceration. It thus appears that either outlet decompression may help vascular insufficiency if performed early in the course of the condition, but perhaps fails after permanent changes have occurred, or the outlet compression was incidental in patients with an unrelated primary vascular disease.

No serious complications have occurred, and no patient was made worse by surgical decompression of the thoracic outlet using the axillary approach.

Summary

Neurovascular compression in the shoulder has long been fragmented into many picayune syndromes which led more to confusion than understanding, resulting in inaccurate diagnosis and often ineffective treatment. The typical symptoms and signs of the syndrome, and the tests that lead to more accurate diagnosis, are described. Two case reports are presented which illustrate the protean nature of the syndrome, both patients being treated for years for cardiac disease which was actually thoracic outlet syndrome.

Conservative management is described, and the surgical measures available for relief for patients with severe and incapacitating symptoms who fail to obtain relief by conservative means, are outlined.

From experience with over 300 patients evaluated by the author for thoracic outlet syndrome, 110 had been unresponsive to intensive conservative treatment, and their symptoms were severe enough to warrant surgical relief. Only one patient was over 55 years, and 89% were between twenty and fifty. Women outnumbered men three to one.

Of the 120 extremities operated on for primarily neurologic symptoms, 93% obtained gratifying relief. Surgical decompression by first rib resection through the new axillary approach seems so specific for the outlet syndrome that failure to improve represents incorrect diagnosis. Symptoms remaining after relief of the true outlet syndrome usually reflect other abnormalities of the neck and shoulder primarily in the bones, joints, ligaments or muscles.

Ten extremities underwent surgical decompression of the outlet for primarily vascular symptoms. Three severe cases failed to improve significantly. This may indicate that early vascular symptoms caused by thoracic outlet syndrome may respond well to surgical decompression, but late cases may not; or that the outlet compression was found coincidentally with a primary vascular disease in three cases.

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The use and abuse of oral hypoglycemic agents*

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A review of the use of oral hypoglycemic agents in the treatment of diabetes is appropriate because of their widespread use and frequent acceptance of poor regulation of dose and control of the disease.

IT IS NOW TWELVE YEARS since oral hypoglycemic agents have been extensively employed in the treatment of diabetes mellitus. Undoubtedly more diabetics receive oral hypoglycemic drugs than receive any other form of therapy. Nevertheless, while making treatment of diabetes simpler, these agents have made it possible for poor regulation to be readily accepted. Frequently a patient who is poorly selected for oral hypoglycemic therapy refuses to take insulin in spite of the fact that his diabetes is not controlled.

Table 1 lists the criteria for selection of patients for oral hypoglycemic therapy. Like all rules in medicine, there are many exceptions, but these rules generally apply in selecting the appropriate patients for the oral drugs. Adult onset diabetics seem to respond well to the oral agents because their diabetes is not as severe as that of the growth onset diabetic, probably because beta cell function is reasonably well preserved in the former. For some unknown reason, those diabetics who do best on oral hypoglycemic therapy have had their disease less than ten years. It is possible that diabetes of a longer duration is associated with more beta cell depletion, and consequently the oral hypoglycemic agents are not as effective. The daily insulin requirement of the patient should be less than 30 units a day, indicating less severe diabetes. The patient should not have any evidence of ketosis, and the fasting blood glucose ought to be less than 200 mg/100 cc. A fasting blood glucose above 200 mg/100 cc. suggests that the patient cannot secrete enough insulin during the night to inhibit gluconeogenesis, again pointing to more severe impairment of pancreatic islet function.

TABLE 1
CRITERIA FOR SELECTION OF PATIENTS FOR ORAL HYPOGLYCEMIC AGENTS

1. Age, above 30-40 years
2. Duration of diabetes, less than 10 years
3. Daily insulin requirement, less than 30 units
4. Ketosis, none
5. Fasting blood glucose, less than 200 mg/100 cc.

There are two major types of drugs used in the regulation of diabetes mellitus as shown in Table 2, the sulfonylureas and the

TABLE 2
ORAL HYPOGLYCEMIC DRUGS IN COMMON USE

	Dosage Form mg.	Usual Daily Dose mg.	Maximum Daily Dose mg.	Half-life Hrs.	Duration of Action Hrs.	Single or Divided Dose
SULFONYLUREAS						
Tolbutamide (Orinase)†	500	1000–2000	3000	4–5	6–12	Divided
Chlorpropamide (Diabinese)	100–250	100– 500	750	35	60	Single
Acetohexamide (Dymelor)	250–500	250–1500	1500	6–8	12–24	Single or divided
Tolazamide (Tolinase)	100–250	100– 750	750	6–8	14–24	Single or divided
BIGUANIDES						
Phenethyl (DBI)	25	50–200	200	3*	6– 8	Divided
Biguanide (DBI-TD Spansule)	50	50–200	200	5*	8–14	Single or divided

† Trade names are given in parenthesis.
* As determined by the disappearance of the isotopically labeled compound.

* This paper was presented at the 63rd Annual Meeting of the Wyoming State Medical Society, August 31, 1966. Dr. Sussman is Asst. Prof. of Medicine, University of Colorado School of Medicine, Denver.

biguanides. The sulfonylureas exert their principal action in stimulating the pancreas to release whatever insulin is remaining in the islets of Langerhans. Although in various experimental studies sulfonylurea drugs may act directly upon peripheral tissues, these agents are uniformly ineffective in the depancreatized animal or man, suggesting that their principal effect is on the islets.

Commonly used compounds

The sulfonylurea most commonly used in this country, and by far the safest compound, is tolbutamide. The only major side effect which has resulted from tolbutamide has been development of an allergic dermatitis in individuals who have demonstrated some hypersensitivity to sulfa drugs. It is important to emphasize that tolbutamide has a rather short half-life and duration of action. Thus, when this agent is employed, it must be given in a divided dose in order to achieve adequate control; for example, 0.5 gram twice or three times per day. While such a program may afford flexibility with regard to altering the dose of oral hypoglycemic agents, many patients are apt to forget a dose of medicine when it is to be taken several times per day. As a result, a number of new oral hypoglycemic agents with greater potency have been developed which are prescribed either once or twice a day, and these have proven to be more convenient.

Chlorpropamide comes in two dosage forms, a 100 and 250 mg. tablet, and because of its long half-life and duration of action, can be given as a single dose. The maximum dose of chlorpropamide is 750 mg., as toxic effects may ensue with larger doses. Because of the greater potency of chlorpropamide, hypoglycemia is apt to occur more frequently. Hypoglycemia should not be regarded as a toxic side-effect of the drug since insulin administration may produce similar effects on the blood glucose level. However, the patients must be cautioned about the possible development of hypoglycemia and instructed as to its proper and prompt treatment.

There is some question as to whether acetohexamide should be given as a single dose or as a divided dose. Acetohexamide does not appear to be as potent or as long lasting as chlorpropamide. It has been our experience that those patients who are controlled will do well on a single dose of acetohexamide. If the patient is poorly controlled on acetohexamide, dividing the dose does not measureably increase the therapeutic response. Acetohexamide has been remarkably free from toxic side effects and has proven to be a fairly safe agent.

The most recent sulfonylurea agent to be developed is tolazamide. This drug should be administered as a single dose, giving up to 750 mg. daily. In some preliminary reports, it has been suggested that tolazamide will rescue many of the therapeutic failures of the other oral hypoglycemic agents.

The biguanides were originally developed during World War I. However, the first agents produced were hepatotoxic and had to be discarded. The biguanides which are more recently employed seem to be non-toxic to the liver. The compound in wide use in this country is phenethylbiguanide. This agent comes in two dosage forms, as a 25 mg. tablet and a 50 mg. time-disintegration capsule which has a longer duration of action. The precise site of action of this agent is as yet unknown. It does not stimulate the pancreas to secrete insulin. It does increase cellular uptake of glucose and stimulates anaerobic glycolysis with the production of lactic acid. In order for this agent to be effective, some endogenous insulin secretion must be present. The tablet can be administered in several divided doses throughout the day and the maximum dose is in the range of 200 mg. The time-disintegration form of phenethylbiguanide can be administered either as a single or a divided dose, depending upon the needs of the patient, and again the maximum dose is 200 mg.

TABLE 3
VARIOUS THERAPEUTIC PROGRAMS IN TREATING DIABETES WITH ORAL THERAPY

1. Sulfonylureas or phenethylbiguanide alone
2. Sulfonylureas and phenethylbiguanide in combination
3. Sulfonylureas and insulin—little rationale for this
4. Phenethylbiguanide and insulin—may be helpful in brittle diabetes
5. Phenethylbiguanide in diabetes and obesity

Table 3 lists the various therapeutic programs which may be employed in treating

diabetes with oral hypoglycemic agents. Either the sulfonylureas or phenethylbiguanide may be administered as initial therapy. Phenethylbiguanide (DBI) has been reported to have an additional advantage in the treatment of the obese diabetic in that it decreases the amount of insulin which is mobilized following oral carbohydrate ingestion. For this reason phenethylbiguanide does not appear to be as lipogenic as insulin or the sulfonylureas. Sulfonylurea drugs, on the other hand, have the advantage in that their principal action is in stimulating endogenous insulin release which would seem to represent a more physiologic mechanism for lowering blood glucose. In patients who are not quite controlled with the sulfonylurea agents, the addition of phenethylbiguanide may be helpful in achieving normal blood glucose levels.

There seems to be little merit for the administration of sulfonylureas in addition to parenteral insulin. It has been suggested that a few patients demonstrating insulin resistance (i.e., requiring more than 200 units of insulin a day for control) may respond to the addition of sulfonylureas in terms of decreasing their daily insulin requirement. In the very brittle, unstable diabetic requiring insulin, phenethylbiguanide may tend to stabilize glucose regulation. However, it should be pointed out that when phenethylbiguanide is added to the basic insulin program, the daily insulin dose should be decreased by 20 to 30 per cent. Most brittle diabetics have not responded well to the addition of phenethylbiguanide to their program.

It is difficult to define precise standards of control to be achieved in patients on oral hypoglycemic therapy. In the older patients who are the most suitable candidates for oral hypoglycemic agents, one is led to speculate whether close standards for diabetic control are realistic. It has been well documented that the glucose tolerance test becomes progressively abnormal with advancing age, and it remains to be shown whether the existence of hyperglycemia without ketoacidosis or glycosuria really presents a significant hazard to this group. Table 4 lists the standards of diabetic control which seem reasonable for the older age population. Certainly a minimum standard is that the patient should be free from ketosis or glycosuria when the oral hypoglycemic agents are employed. By and large the older patients tend to have elevated renal threshholds for glucose and if glycosuria is observed, then usually the blood sugar is inordinately high. The author believes that the patients on oral hypoglycemic therapy should have normal fasting blood glucose levels and that the postprandial blood glucose should be below 180 mg/100 cc.

TABLE 4
STANDARD OF DIABETIC CONTROL WITH ORAL HYPOGLYCEMIC THERAPY

1. No ketosis
2. No glycosuria
3. Normal fasting blood glucose
4. One hour post-prandial blood glucose below 180 mg/100 cc.

TABLE 5
MOST COMMON ERRORS MADE IN THE USE OF ORAL HYPOGLYCEMIC AGENTS

1. Poor initial selection of patients
2. Poor or no dietary adherence
3. Inadequate drug dosage or poor drug scheduling e.g., Tolbutamide should be given at least twice daily
4. Keeping patients on oral therapy during period of acute stress (surgery, infections, other intercurrent illness)
5. Using oral drugs in the presence of serious hepatic, cardiac or renal disease

The most common errors in the use of oral hypoglycemic drugs are shown in Table 5. By far the greatest mistake in the use of these agents is poor initial selection of patients. Once the patient has taken insulin and is then placed on oral agents, it is particularly difficult to return to insulin therapy. Another major reason for failure to respond to the oral drugs is absent or poor dietary adherence. The point must be emphasized that if the diabetic patient is unwilling to follow some sort of dietary program of carbohydrate restriction, that oral hypoglycemic therapy is almost doomed to failure.

It is imperative that these drugs be given in an adequate dose at the proper times. As already noted, tolbutamide, because of its rather short half-life, is to be given at least twice daily. Even the more potent drugs may not act as long as desired and a divided

dose may have to be given. It is clear that during acute distress such as an intercurrent illness or a surgical procedure, the patient may no longer be responsive to oral hypoglycemic therapy and his diabetes manifestly out of control. In this setting it is necessary to discontinue the oral hypoglycemic therapy and place the patient on parenteral insulin.

As has been previously noted, most of the oral hypoglycemic agents are relatively nontoxic. Rarely, side effects such as agranulocytosis, jaundice, nausea, vomiting, gastrointestinal distress have been seen, but these drugs have proven to be remarkably safe over a period of years. Nevertheless one has the impression that in the face of serious hepatic, renal or cardiac disease (in which the metabolism of these agents may be altered or their effects on intermediary metabolism unknown), the oral hypoglycemic drugs should not be given. If patients have serious cardiac, hepatic or renal disease, insulin therapy is safest.

There is little evidence to suggest that oral hypoglycemic agents are teratogenic in man when given in an adequate dose to insure diabetic control. A high incidence of fetal loss has been seen following the use of these drugs in animals. As a result, it is recommended that these agents not be administered to pregnant diabetics or even to women of child-bearing age. In actual practice the young female is usually poorly responsive to the oral drugs and needs to be controlled with insulin.

Summary

The use of oral hypoglycemic agents in the treatment of diabetes mellitus has been reviewed. The criteria for selection of patients for oral hypoglycemic drugs have been listed as well as the various drugs employed. Possible standards which should be used in assessing diabetic control in the older age population have been discussed. Some of the more common errors made in the use of oral hypoglycemic agents have been listed. •

GENERIC AND TRADE NAMES OF DRUGS:
Tolbutamide—Orinase,
Chlorpropamide—Diabinese,
Phenethylbiguanide—DBI,
Acetohexamide—Dymelor,
Tolzamide—Tolinase.

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Electophoresis for the practicing physician*

IV. Immunoelectrophoresis and immunodiffusion

Elmer W. Koneman, MD, Billings, Montana

THE FIVE SERUM PROTEIN FRACTIONS obtained by routine paper electrophoresis can be further separated into a number of subfractions by a technic known as immunoelectrophoresis. It is the purpose of this presentation to briefly review this method and discuss the possible clinical applications. A detailed discussion of both immunoelectrophoresis and immunodiffusion can be found in an excellent monograph by Crowle[32].

The immunoelectrophoresis method originally described by Scheidegger[33] is most suitable for use in the routine clinical laboratory. Two per cent molten purified agar is first layered to a thickness of 2-3 mm. on a 3 x 1 in. glass microscope slide. After the agar hardens, a serum well and two parallel troughs are cut into the agar as shown in Fig. 1-A. The serum to be tested is inoculated into the central well, and the slide is placed into an electrophoresis migration chamber. With the application of an electrical potential across the length of the slide, the serum separates into five fractions (Fig. 1-B). Anti-human serum† is next pipetted into each of the troughs (Fig. 1-B). The slide is then placed into a moisturized chamber at 4° C. for 24 hours during which time the serum and antiserum diffuse into the agar toward one another. Where they meet at the interface, a number of precipitin arcs form, each representing the reaction between a specific antigen in the serum and its precipitating antibody (schematically drawn in Fig. 1-D).

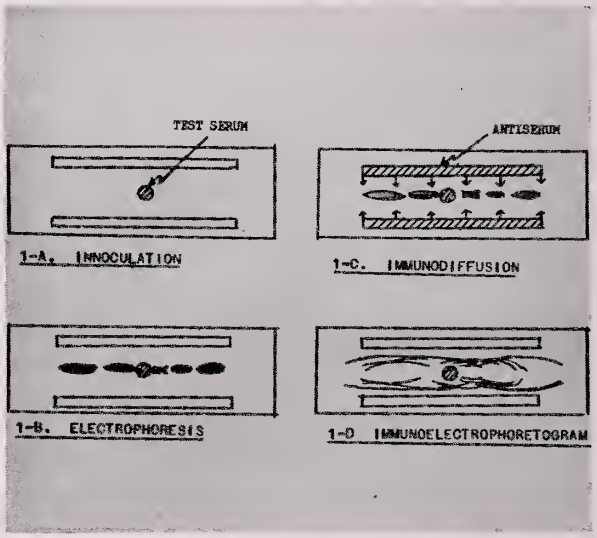

Fig. 1. Schematic diagram illustrating the routine immunoelectrophoresis procedure.

The precipitin arcs can be better visualized if stained with a protein stain such as Thiazide Red-R. Fig. 2 is a photograph of a stained immunoelectrophoretogram using a human serum pool as the test serum.

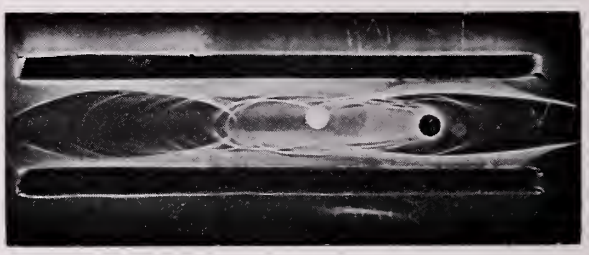

Fig. 2. Stained immunoelectrophoretogram—normal serum (well) against goat antihuman serum (trough). Migration to the left—150 v., 40 milliamperes for 1½ hours. Small opaque circle is a staining artifact.

* Parts I, II and III of this series appeared in the May (Montana), June, and November issues of this Journal during 1966.

† Available from Hyland Laboratories, Los Angeles, California.

Although up to 30 different protein fractions have been identified in normal human serum by this technic, only about a dozen have current clinical significance. These fractions and their relationship to the five major paper electrophoretic fractions are as follows:

Protein Fraction (Paper Electrophoresis)	Protein Sub-Fraction (Immunoelectrophoresis)
Albumin	Albumin
Alpha-1 Globulin	Alpha-1 Glycoproteins Alpha-1 Lipoprotein
Alpha-2 Globulin	Alpha-2 Glycoproteins Alpha-2 Macroglobulin Ceruloplasmin Haptoglobin Alpha-2 Lipoprotein
Beta Globulin	Transferrin (Siderophilin) Beta Lipoprotein Fibrinogen (Plasma)
Gamma Globulin	"Immunoglobulins" Gamma-G Gamma-A Gamma-M Gamma-D

This relationship is more clearly illustrated in Fig. 4.

Routine immunoelectrophoresis is well suited for the identification of a large number of serum protein fractions; however, it has the limitation that only a crude visual estimation of the quantity of any single fraction can be made. For this reason search has been made for methods to more accurately quantitate the individual protein subfractions. A number of immunodiffusion procedures suited for this purpose have been devised, three of which are illustrated in Fig. 3. A semi-quantitative double diffusion slide test has been developed and successfully used in our laboratory (Fig. 3-A). Serial dilutions of test serum are placed successively in a series of agar wells drilled on either side of a central trough. Antiserum specific for the fraction being measured is inoculated into the trough. After 24 hours of diffusion, precipitin arcs form at the interface. The final read out is that dilution at which visible precipitation no longer occurs. This method has the disadvantage of being tedious and requires final readings in dilution-titers rather than in milligram equivalents.

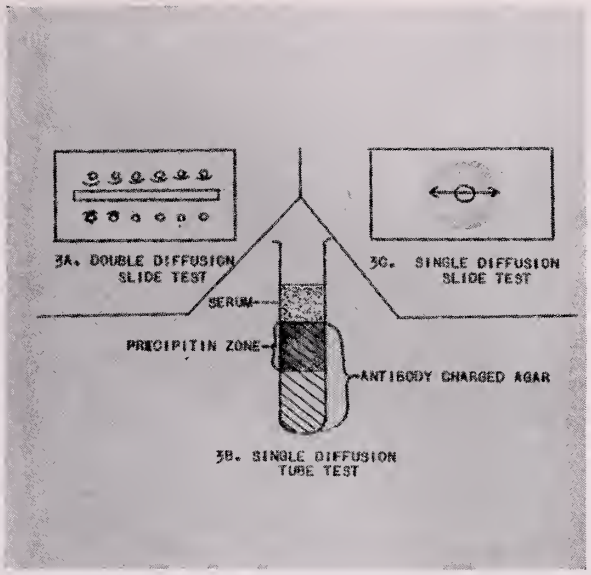

Fig. 3. Schematic diagram illustrating three immunodiffusion quantitation procedures (see text).

An accurate single diffusion tube method (Fig. 3-B) has been developed by Claman and Merrill[34]. Specific antiserum is added directly to the molten agar, and the mixture is introduced by capillary action into a narrow bore capillary tube. After the agar-antibody mixture hardens, test serum is overlaid on the surface from which it diffuses downward into the gel. A broad visible precipitin band develops, the width of which is proportional to the concentration of the serum fraction being tested. By comparing with standard sera of known concentration, final readings in milligrams per cent can be made.

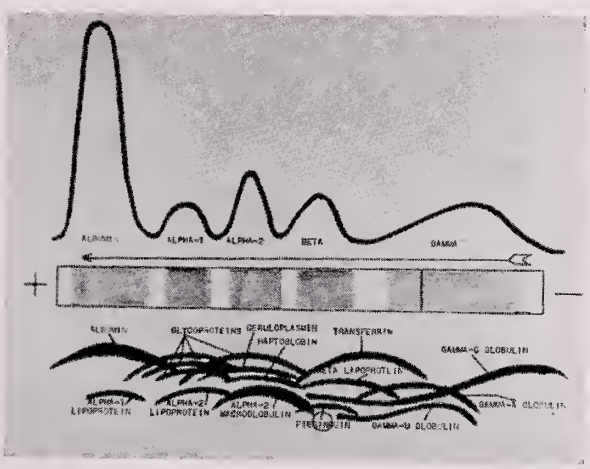

Fig. 4. Relationship between the major protein fractions on paper electrophoresis (above) and immunoelectrophoresis (below).

Probably the simplest test to perform is the radial diffusion slide test shown in Fig. 1-C. As with the tube test, specific antiserum is first mixed with molten agar which is then evenly layered to a depth of 2-3 mm. on a 3 x 4 in. glass slide. After the agar hardens, one or more serum wells are cut, each to be filled with the serum samples to be tested. After diffusion, a precipitin ring forms, the diameter of which is proportional to the concentration of the serum fraction being measured. By comparing with standards of known concentration, final milligram per cent readings can be made. A more sensitive final quantitation of the radial diffusion method has been described by Stiehm and Fudenberg[35]. An enlarged projection of the precipitin ring is traced on paper. The paper disc is then cut out, weighed on an analytical balance, and compared with similar discs made from known standards for final quantitation.

Clinical applications

During the past two years we have performed immunoelectrophoresis and immunodiffusion quantitation tests on well over 200 patients with a variety of diseases. Although it is not the purpose of this paper to discuss these findings in detail, a summary of the alterations within some of the serum subfractions and the possible clinical applications will be presented.

1. "IMMUNOGLOBULINS"

Recent advances in understanding of the genetics and chemical structure of gamma globulins and application to clinical disease has been reviewed in detail by Tomasi[36]. The confusing nomenclature has now received international standardization under the auspices of the World Health Organization, as recently reviewed by Smith[37]. The gamma globulin fraction separated by routine paper electrophoresis is a heterogeneous group of proteins classified by immunoelectrophoresis into four subfractions collectively known as "immunoglobulins." These fractions are designated: Gamma-G, Gamma-A, Gamma-M, and Gamma-D globulins. The Gamma-D fraction has only recently been discovered by Rowe and Fahey[38] and little is known of its clinical significance.

It is important to know that alterations in one or more of the individual immunoglobulin fractions can occur without producing a diagnostic change in the routine paper electrophoretic pattern. For this reason it is necessary to perform immunoglobulin quantitation studies on all patients clinically suspected of having either hyper- or hypogammaglobulinemia, regardless of what the routine paper electrophoresis shows. Although the specific antibody activity possessed by each group of immunoglobulins is still incompletely known, it has been our observation for some time that a deficiency in a single fraction may be correlated with clinical disease. In a recently published extensive review of the gamma globulins, Rosen and Janaway[39] have tabulated and discussed the various antibody deficiency syndromes which have been described. Gilbert and Hong[40] had also previously reviewed the immunoglobulin deficiency states. In our practice, we have particularly noted a high incidence of Gamma-A globulin deficiency. Gamma-A globulin has been found in high concentration in the nasal-bronchial secretions in addition to its presence in the serum. Smith[37] makes particular reference to a deficiency of Gamma-A globulin in both the serum and nasal-bronchial secretions in patients with bronchiectasis and sinusitis. One must be somewhat careful, however, in the evaluation of individual cases in that the total absence of an immunoglobulin fraction has been found in clinically asymptomatic individuals[41]. It is also known that in such diseases as the paraproteinemias, immunoglobulins may be greatly increased in concentration but yet be functionally deficient. The clinical management of patients with a single immunoglobulin deficiency should be conservative, particularly if either Gamma-A or Gamma-M globulins are low. The administration of commercial pooled gamma-globulin in such cases would be of little value since only trace amounts of these fractions are contained. Smith[37] also cautions against the administration of pooled globulin to female infants since gamma-globulin isosensitization from a mother of different type has been observed. In patients with deficiency of all immunoglobulin fractions, measuring

the antibody response after specific challenge with various antigens (for example, typhoid vaccine) may be helpful in the overall evaluation.

In a study of 35 patients with hypergammaglobulinemia secondary to a wide variety of chronic inflammatory conditions, we were unable to correlate the disease type with a specific immunoglobulin alteration. A similar conclusion was made by Claman and Merrill[42] following a more extensive study, although they found that an increase in Gamma-G or Gamma-M globulins rarely occurred alone, and that the Gamma-A fraction was most frequently elevated. We have also studied 21 cases of hepatic cirrhosis and again were unable to correlate the type of cirrhosis with a specific immunoglobulin alteration. It is apparent that the immunoglobulin alterations in patients with hypergammaglobulinemia are determined by factors other than the type of disease present.

2. TRANSFERRIN (SIDEROPHILIN)

Transferrin is the serum protein which binds and transports iron, and can be easily identified on the immunoelectrophoretic pattern as a prominent band migrating in the beta globulin area. Based upon slight differences in electrophoretic migration rate in starch gel, at least 15 molecular forms of transferrin have been identified. These various phenotypes apparently do not differ in their metabolic or physiologic functions, and their chief clinical application has been in the study of population genetics and paternity testing. The quantitation of transferrin by immunologic technics has not found routine clinical usage, and, in practice, the amount of transferrin in circulation is usually deduced from the amount of iron that can be bound (total iron binding capacity). Increase serum levels have been demonstrated in iron deficiency anemia, in pregnancy and in cases of hepatic damage. Decreases have been noted in a number of diseases such as chronic infection, malignancy, nephrosis, malnutrition and other conditions where plasma proteins are depleted through either impaired synthesis or increased loss[43].

3. HAPTOGLOBIN

Haptoglobin is the serum protein which has the property of binding free hemoglobin. The hemoglobin-haptoglobin complex is too large to pass the renal glomerulus and is rapidly removed from the plasma by the reticuloendothelial system. This serves to some degree to preserve the body stores of iron in cases of hemolytic anemia. Haptoglobin has been separated by starch gel electrophoresis into three molecular types, also having application in the study of population genetics.

Serum haptoglobin below 50 mg. per cent indicates a decrease in red cell survival, and is frequently seen in conditions such as pernicious anemia. Following an episode of acute hemolysis, serum haptoglobin may fall to non-detectible levels. This may be of value to clinical laboratories and blood banks as an aid in the evaluation of alleged transfusion reactions. In such cases, a normal serum haptoglobin would indicate that the reaction occurred secondary to factors other than hemolysis from mismatched blood. We have found no decrease in serum haptoglobin following routine blood transfusions.

Serum haptoglobin may be increased in a wide variety of neoplastic and inflammatory diseases, and in some instances has been more sensitive in detecting acute tissue injury than the erythrocyte sedimentation rate.

4. CERULOPLASMIN

Ninety to 95 per cent of the serum copper is tightly bound to a globulin known as ceruloplasmin. This protein migrates with the Alpha-2 globulins and has a bluish color. The property of ceruloplasmin to catalyze the oxidation of paraphenylenediamine (PPD) with the formation of a blue-green color complex serves to identify the precipitin arc on the immunoelectrophoretic pattern and is the basis for the serum chemical test.

The normal serum concentration is 20-35 mg. per cent. Low serum levels are found during the first six months of life, in conditions such as nutritional or renal hypoproteinemia and in cases of defective intestinal copper absorption. A persistent serum deficiency or absence is virtually diagnostic of Wilson's disease; however, as pointed out by Sternlieb[44], heterozygous carriers of a single abnormal gene may show moderate reduction in serum ceruloplasmin in the absence of

clinical disease. In such instances the diagnosis of Wilson's disease can only be made by measuring the copper concentration in a liver biopsy specimen. An increase in serum concentration has been described in a number of neoplastic and inflammatory diseases, but is non-specific and of limited usefulness.

5. LIPOPROTEINS

Two major lipoprotein fractions are identified by paper electrophoresis when stained for fat. The more rapidly migrating fraction is known as alpha lipoprotein and corresponds to the Alpha-1 lipoprotein on immunoelectrophoresis. The slower moving beta lipoprotein, migrating with the Alpha-2 globulins on immunoelectrophoresis, comprises the major portion of the serum protein bound lipids. By ultracentrifugation of serum, the alpha fraction is a high density lipoprotein (HDL) while the beta fraction is of low density (LDL). A third lipoprotein fraction (beta-1 lipoprotein) can also be identified by immunoelectrophoresis.

The relationship between the metabolism of lipids, the serum levels of the various lipoproteins and the etiology of atherosclerosis is still poorly understood. The serum cholesteral is most frequently measured for this purpose, if for no other reason than it is the simplest test to perform. According to the results published by Kroman, et al[45], the serum triglyceride is probably a better index of atherosclerosis than either the cholesterol or lipoprotein. However, quantitation of the high and low density lipoproteins may be of value in that the ratio HDL over LDL is increased in subjects with coronary arteriosclerosis[46]. The methods for determining the various serum lipid fractions are time consuming and performed by only a few specialized laboratories. In our experience the technics of immunoelectrophoresis and immunodiffusion are not well suited for the quantitation of serum lipoproteins. Specific antisera are not available for all the fractions, and the large size of the lipid-protein molecule results in poor and irregular diffusion in agar.

Utilizing the above described double diffusion slide technic, we measured the serum beta lipoprotein in 32 patients with acute myocardial infarction. In only 5 cases were

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both the serum cholesterol and beta lipoproteins elevated. Cholesterol alone was elevated in 6 cases, and beta lipoprotein alone in 7 cases. Neither were elevated in the remaining 14 cases. It is doubtful if measurement of serum beta lipoprotein offers any advantage over the cholesterol in assessing the risk of myocardial infarction, although measuring both together appears of more value than either alone.

One other clinical entity in which measurement of serum lipoproteins is of value is in the diagnosis of Tangier disease (familial high density lipoprotein deficiency). Originally described in children by Fredrickson[47], this condition is characterized by hypercholesterolemia, a decrease or absence of serum high density lipoprotein (HDL) and an infiltration of the tonsils and other tissues with foam cells containing high concentrations of cholesterol eters. Hoffman and Fredrickson[48] have recently reported two cases occurring in adults.

6. ALPHA-2 MACROGLOBULIN

The large molecular weight alpha-2 macroglobulins are retained in patients with the nephrotic syndrome and accumulate in the serum. We have observed a conspicuous elevation of this fraction in 8 patients with the nephrotic syndrome. Peterhofsky, et al.[49], found that nephrosis was the only protein losing condition among several which they studied in which serum elevation of the alpha-2 macroglobulin occurred. In our experience, the estimation of this fraction is particularly useful in those patients who present with proteinuria of unknown duration or severity. The test is also useful in assessing the therapeutic response during remission. We have observed a return to normal of the alpha-2 macroglobulins within 5 days after therapy was instituted in patients with nephrotic syndrome in relapse.

Conclusion

With continued improvement in the specificity and sensitivity of the immunoelectrophoretic and immunodiffusion technics, many new protein fractions will be discovered in the future. These methods are of particular value since any substance to which an antibody can be formed can be exactly quantitated. Estimation of various serum protein subfractions will be of increasing value to the physician as an aid in the diagnosis of clinical disease. •

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Oxygen, an important pharmacologic agent

Thomas L. Petty, MD, Buff B. Burtis, MD, and D. Boyd Bigelow, MD, Denver*

Historic notes and modern applications of oxygen are reviewed, and new data on blood gas response to controlled oxygen breathing are reported.

OXYGEN is an important drug in clinical medicine. Like any other drug, it has indications, contraindications, proper dosage, potential toxicity, and expense. The literature and medical tradition are replete with controversy concerning these features of oxygen therapy. This brief review is designed to present old and new data concerning the use of oxygen, particularly in chronic obstructive lung disease. A brief historical review is included for perspective.

History

For centuries, it was believed that respiration was solely for the purpose of heat exchange. When animals were placed in an air tight chamber by Aristotle (384-322 B.C.), their death was thought to be caused by overheating. This concept of ventilation dominated man's knowledge of respiratory physiology until the Renaissance.[1, 2]

Early in the 16th century, Paracelsus began to suspect that something in the air itself was necessary to sustain life. The next 150 years witnessed the birth of a scientific and technological revolution, during which time attempts were made to investigate the body's functions as well as other natural phenomena. Vesalius made further observations of air deprivation, Harvey discovered the circulation, and Boyle began studying the chemical combination of gases. Hooke discovered he could keep a dog alive with open thoracotomy by intermittent insufflation of the lungs with bellows (first record of ventilatory assistance). In 1669, one of the great discoveries in respiration occurred when Richard Lower observed the color change in the blood as it passed through ventilated lungs, and concluded that blood absorbed some "quality" from the air, which he termed the "nitro-aerial spirit."[2] Following this, little advance occurred until the discovery of the gases of respiration.

Delayed partly by George Stahl's erroneous Phlogiston Theory of combustion, the next steps of progress did not occur until the second half of the 18th century. Joseph Black (1728-1799) noted that quickened lime and alkali produced a gas, "fixed air," which was not respirable (carbon dioxide). He noted that this same gas was given off by the lungs in expired air. After experimenting with several gases, Joseph Priestly (1733-1804), an English Unitarian minister, produced oxygen, which he called "dephlogisticated air," by heating of nitre in 1774.[3] Following considerable investigation, he and two mice breathed the gas and found it respirable. On doing so, Priestly experienced a "light and easy" feeling which prompted him to declare "who can tell but that, in time, this pure air may become a fashionable article in luxury;" because of his allegiance to the Phlogiston Theory, he failed to appreciate the true implications of his discovery. However, in the next two decades the French scientist, Lavoisier (1743-1794), with the knowledge of Black's and Priestly's new gases was able to comprehend the fundamental principles of breathing and respiration. Lavoisier was able to show that animal respiration was a process of oxygen combining with other substances in the body to produce carbon dioxide and water. Moreover, the amount of carbon dioxide thus produced was nearly equal to the oxygen consumed[2, 4] (concept of respiratory quotient). As the 18th century closed, the purpose of respiration had been discovered and oxygen had been isolated. From that time on, investigators devoted their attentions to the analysis of respiration and to the study of hypoxia.

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Analysis of respiration and hypoxia

By 1851, Liebeg speculated that oxygen and carbon dioxide in the blood were not just dissolved, but were in some loose combination with an unknown substance. In 1862, Hoppe-Seyler discovered that the blood gases were in loose combination with hemoglobin.[2]

A prominent physiologist of the 19th century, Paul Bert (1833-1886), one of Claude Bernard's students, using himself and animals as subjects, studied the physiological effects of abnormally high and low atmospheric pressures utilizing a pressure chamber of his own construction. His contributions were of great importance in connection with balloon ascents and work in caissons. In his book, *Barometric Pressure,* are found experimental data upon which he constructed the first oxygen-hemoglobin dissociation curve, basically the same as that in use today. Bert's most important conclusion, and no less controversial, was that the partial pressures of oxygen and other gases and not the proportions are responsible for their physiologic effects. His work, however, was not fully accepted until some 25 years later.[4]

As the 20th century began, advance in understanding the mechanisms of respiration and the nature of oxygen continued. John Scott Haldane of Oxford (1860-1936), with several associates began to delineate the gaseous regulating mechanisms in states of hypoxemia. As various investigators began to demonstrate the manner by which carbon dioxide is carried in the blood, other investigators began studies on the hydrogen ion concentration in the blood. By 1912, the Danish biochemists, Karl Albert Hasselbach and Christen Lundsgaard, derived a formula by which the hydrogen ion could be measured. The results of these findings and subsequent investigations established that the control of respiration is the result of very slight chemical alterations in the blood and the tissues. Two years later, in 1914, Sir Joseph Barcroft (1872-1947) of Cambridge demonstrated that the form of the dissociation curve of oxyhemoglobin is related to the hydrogen ion concentration.[4] The dissociation curve for carboxyhemoglobin was also studied.

During this same period, new interest developed in the subject of anoxemia, mountain sickness, and the results of living at high altitudes. A series of worldwide mountain expeditions resulted including two by Barcroft in 1910 and 1911 and another to Pike's Peak under the leadership of J. S. Haldane. These studies, still classics in the field, gave new information on cyanosis at high altitude and effect of altitude on dissociation curves.

A new era in the physiology of respiration was introduced in 1927 by Heymans with the discovery that respiratory reflexes could be elicited from the chemoreceptors in the aortic arch and carotid bifurcation. In 1940, these findings were greatly elaborated by Schmidt and Comroe who described the threshold of hypoxia and the sensitivity to carbon dioxide in the chemoreceptors as well as in the central respiratory centers.[2]

Introduction of oxygen therapy

The first therapeutic use of oxygen was but six years after its discovery. Chausier, a Frenchman, administered the new gas to dyspneic patients suffering from tuberculosis and cyanotic newborn infants in 1780.[5] A year later, Ingenhousz developed a rubber face mask to facilitate oxygen administration which closely resembles today's model.[2]

However, the real founder of oxygen and inhalation therapy appears to have been Thomas Beddoes (1760-1808) of England.[6] Beddoes, having studied the works of Priestley and Lavoisier, made plans to put their discoveries to practical medical usage. With the technical assistance of the inventor and engineer, James Watt, who constructed a pneumatic apparatus to store and eject gases, Thomas Beddoes established the Pneumatic Institution at Clifton, England in 1798. The Institution consisted of a hospital, clinic, and a scientific laboratory for the investigation of "factitious airs." The Pneumatic Institution flourished between 1798 and 1801 during which time oxygen enriched atmospheres were used in the treatment of a multitude of diseases—heart disease, asthma, opium poisoning, ulcers, paralysis, leprosy, dyspepsia, scrofulous infections, and melancholia. During a typhus epidemic in 1800, the Institution became overwhelmed with crowds of patients, and gradually treatments more applicable to specific diseases began to replace the pneumatic practice.

After the death of Beddoes in 1808, little else was done to develop oxygen and inhalation therapy until the close of the century, primarily due to the difficulty in isolating and manufacturing oxygen. However, in 1895 Carl Von Linde put oxygen on a commercial basis by producing oxygen through the fractional distillation of liquid air. Following this, oxygen began to find its rightful place in medical therapy and therapeutic measures developed rapidly. Sir Arbuthnot Lane in 1907 advised his fellow physicians about the administration of oxygen by nasal catheter, which was used in the treatment of war casualties in World War I.[2, 5] By 1920, the first oxygen bed tent had been developed replacing the oxygen chambers of that day, and by 1924 features were added to the tents for removal of carbon dioxide, water vapor and heat.[1, 5, 7]

Following the introduction of arterial puncture, for purposes of obtaining blood for analysis, studies elucidated the value of various methods of administering oxygen and clarifying the value of oxygen therapy in the treatment of hypoxemia. In 1921, an interesting case appeared in the medical literature which described an uncompensated respiratory acidosis as a consequence of shallow breathing occurring in two patients with encephalitis. When oxygen was administered, an increase in arterial oxygen saturation was noted along with a marked rise in arterial carbon dioxide content. The circulation soon failed and this was attributed to CO_2 retention.[8] With this and other examples, the clinical entity of oxygen induced hypoventilation became recognized in neurological conditions as well as in other clinical situations, and the need for assisted ventilation in certain cases became apparent. Unfortunately, such isolated early observations succeeded in overly exaggerating the danger of oxygen therapy.

Actually pressure breathing or assisted ventilation was appreciated much earlier, antedating the therapeutic use of oxygen by several centuries. Elisha in II Kings furnished the first example of mouth-to-mouth resuscitation by breathing life into a child's mouth. As mentioned, Hooke kept a dog alive in 1667 by using bellows. In 1771, a case was observed in England of a man "seemingly dead in appearance" who was revived by mouth-to-mouth insufflation.[1] Unknown to many, President Abraham Lincoln was also the recipient of mouth-to-mouth resuscitation which probably contributed to his living an additional ten hours.[9]

It is not the intent of this brief report to review all of the methods of oxygen administration reported over the past half century. During this period, however, two principles have been established: (1) oxygen is effectively and conveniently administered by nasal methods, and (2) oxygen should be administered in controlled fashion so that possible undesirable side effects are minimized.

From the standpoint of comfort and efficiency, the two-prong nasal cannula is most practical for clinical use (Fig. 1). This method of oxygen administration is exceedingly effective, provides excellent patient comfort, and eliminates many of the difficulties of other methods of administration (e.g., fire hazard and claustrophobia with tents, discomfort and risk of gastrointestinal overdistension with nasal catheter, oppression by nose and mouth covering devices such as nonrebreathing and rebreathing face masks).[10]

The concept of controlled flow oxygen therapy was introduced by Haldane in 1917.[11] Haldane suggested use of the minimum flow (one to three liters per minute) which would relieve cyanosis. Numerous methods of controlling the oxygen administration of the inspired air have been described.[10-15, 22-25, 28] The common denominator of these various devices remains the control of oxygen concentration

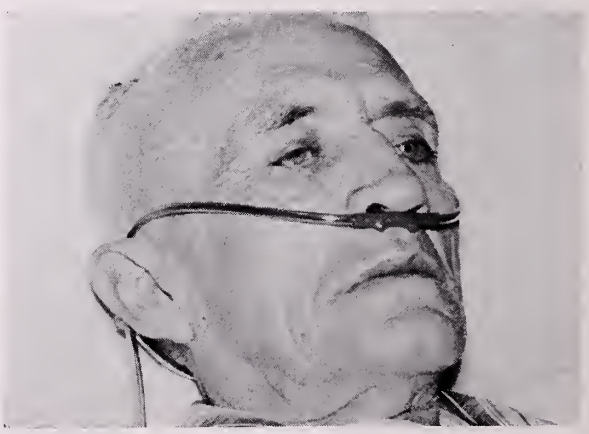

Fig. 1. Two pronged nasal cannula delivering controlled low flow oxygen.

of the inspired air. Oxygen flow through nasal cannula is controlled by adjustment of calibrated flow meters. The net concentration of oxygen delivered into the trachea will be a product of the oxygen flow and the patient's minute ventilation. For example, at two liters per minute O_2 flow and eight liters total minute ventilation, the calculated O_2 concentration of the inspired air is $2 \times 100\% + 6 \times 20.9 = 40.6\%$ O_2. This is because the 100% is diluted by 6 liters of air ventilation. If the total ventilation is halfed to four liters per minute, the theoretic O_2 concentration of the tracheal air is 60.4% because the inspired 100% is diluted by less atmospheric air (less ventilation).

It should be stressed that arterial PO_2 or SAO_2 cannot be predicted from these calculations because obstructive airway disease may lead to altered ventilation-perfusion relationships or impaired pulmonary-capillary gas exchange. In addition, impaired pulmonary circulation may alter oxygen uptake. For these reasons, it is necessary to monitor arterial blood to evaluate the efficiency of oxygen therapy technic. Arterial puncture is a simple and safe procedure.[16] The technic of a "single stick" arterial puncture is demonstrated in Fig. 2. Modern oximeters are rapid and accurate in determining oxygen saturation.* pH, pCO_2, and pO_2 electrodes† have also been perfected to the point that blood gas and pH measurements have become commonplace.

Recently, we have compared the blood gas response of normal adults to patients with severe chronic airway obstruction and hypoxemia with various flows of oxygen via the two-prong nasal cannula method. Arterial blood samples were obtained via a Riley indwelling needle and analysis made on Clark pO_2 and Severinhaus pCO_2 electrodes; alternately the Astrup method[17] was used for pCO_2 determination and pH measurements with the radiometer electrodes. Fig. 3 represents the blood gas response to various oxygen flows in five normal volunteers. At Denver (altitude 5,280), the actual pO_2 range is 65-75. Oxygen flows as low as one liter per minute produce excessive oxygen concentration in the arterial blood of normals. By comparison, Fig. 4 illustrates the blood gas response at one, three, and five liter flow in ten patients with severe chronic airway obstruction. In some cases, oxygen flows of three liters per minute provide acceptable or above normal arterial pO_2 levels. CO_2 retention during O_2 breathing was not observed during this study. In our clinical experience, underventilation on controlled oxygen breathing rarely occurs and is always found with concomitant sedation on very marked airway obstruction such as in preterminal states of emphysema and bronchitis. In chronic airway obstruction, the oxygen flow should be individualized since marked patient to patient variation exists. Our approach is to begin oxygen at three liters per minute, i.e., the flow rate which will most often bring the arterial pO_2 to normal. Further adjustments are indicated by arterial pO_2 or oxygen satur-

Fig. 2. Technic of Single Stick Arterial Puncture. The glass syringe is filled with sufficient heparin to fill the dead space of the syringe and the disposable No. 20 needle. The needle is directed at approximately 65 degree angle toward the palpable pulse. A pulsatile flow of blood into the syringe establishes that the artery has been entered.

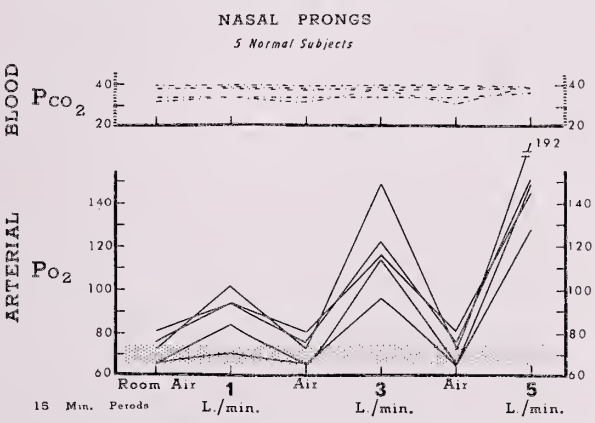

Fig. 3. Blood gas response to one, three, and five liter oxygen flow in five normal individuals.

*e.g., American Optical Co., Chelsea, Massachusetts.
†e.g., Radiometer Co., Westlake, Ohio.

ation determinations. Higher oxygen flows may be needed when markedly impaired oxygen transport exists (e.g., pulmonary fibrosis or pulmonary edema).

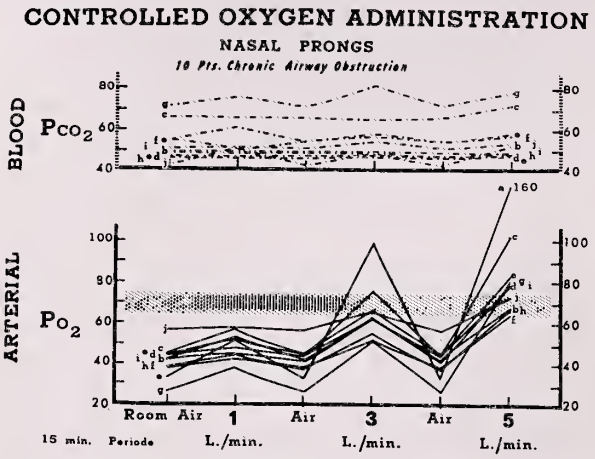

Fig. 4. Blood gas response at one, three, and five liter oxygen flow in ten patients with severe chronic airway obstruction compared to blood gases on air breathing.

Any effective pharmacologic agent has a potential toxic dose. The most feared adverse reaction during oxygen administration has been alveolar underventilation and dangerous CO_2 retention.[18-21] By contrast, our experience during the past two years with 175 patients with chronic airway obstruction receiving continuous nasal oxygen has indicated that with controlled oxygen flows, dangerous oxygen build-up rarely occurs.[22] The big difference with our experience and that previously reported probably has to do with the concept of controlled dose. It is our aim to return the pO_2 to normal and not to provide excess oxygenation. It is likely that excessive oxygen concentrations do depress respirations; thus controlled oxygen flow and careful clinical and blood gas monitoring are essential to safe and effective oxygen administration. There is no reason to attempt to obtain 100% arterial saturation.

Chronic administrations of oxygen in concentrations greater than 350-400 millimeters of mercury (approximately 65% at one mile altitude) have reportedly caused oxygen toxicity in man manifest by oxidative hemolytic anemia, serum enzyme changes, lassitude, occasional convulsions and other cerebral symptoms.[23, 24] In dogs receiving oxygen greater than 550 millimeters symptoms of progressive respiratory distress, pulmonary edema, and increased pulmonary surface tension (probably from loss of surfactant) occurs in approximately 50 hours.[25] Many patients, however, have received artificial ventilation at pO_2 400-500 for up to ten days with no clinical or measurable evidence of oxygen toxicity.[26]

A recent advance in engineering has provided for portable oxygen equipment suitable for patient use outside the hospital, clinic, and home. This device, the oxygen walker (Fig. 5), is a light weight superbly insulated container which is filled with liquid oxygen. The liquid oxygen constantly "boils off" into gaseous oxygen which is consumed by the patient. An intermediary container (reservoir) is maintained in the hospital or the patient's home. The reservoir is filled approximately twice a week and the liquid oxygen walker is refilled every two to four hours, depending upon the oxygen consumption. This type of equipment allows the patient freedom to move about outside the home with continuous oxygen, including trips to the store for shopping or even return to part-time work. Some patients keep the liquid reservoir in their automobile for more extended trips.

Fig. 5. The Linde Liquid Oxygen Walker System. Patient's canister (top) being refilled from reservoir (bottom).

This type of equipment is ideal for patients who need oxygen continuously to provide the oxygen for excessive work or breathing and the oxygen necessary for increased exercise. It has been shown that oxygen is an exceedingly important adjunct in improving exercise tolerance and in general physical retraining.[27] Currently, this equipment is commercially available only in four cities (Denver, Dallas, Birmingham, and Atlanta). The future promises wider distribution and even less bulky and less heavy equipment which will contain even greater supplies of oxygen.[28]

Summary and conclusions

Oxygen should be thought of as an important drug in clinical medicine, particularly in chronic respiratory disease with hypoxemia. A brief historic review has shown that much of what is known of the utility of oxygen was reported in the past. Oxygen has a proper dose ranging from one to three liters per minute in obstructive airway disease to higher flows in clinical situations with markedly impaired gas exchange. The fear of carbon dioxide narcosis during oxygen breathing has been overly exaggerated and recent experience shows this rarely occurs at low flow, controlled oxygen administration. Excessively high concentrations of oxygen can cause cerebral symptoms and possibly can damage the alveolar membrane. However, when oxygen is used with the same precision as other pharmacologic agents, it is an extremely safe medication. Liquid portable oxygen equipment is a new advance for those who need continuous oxygen therapy. •

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Catheterization of the subclavian vein*

An unusual complication

William S. Davis, MD, and
David R. Akers, MD, Denver

The purpose of this article is not to condemn the method which has been used satisfactorily numerous times in patients of all sizes at Children's Hospital, but rather to describe another complication not previously recorded and to emphasize that the technic of inserting the catheter must be meticulous.

WILSON, et al.,[1] in 1962 described the indications, technic and value of placement of an indwelling catheter in the superior vena cava by way of the subclavian vein. This was used both as a route for administering fluids and for monitoring the central venous pressure. The obvious advantages of the method led to its widespread use.

In the original paper, no complications were reported except in a footnote which stated that some pneumothoraces had occurred following subclavian cannulation by resident staff members. Subsequent papers[2,3,4] have reported other complications including pneumothorax and subcutaneous emphysema (requiring tracheostomy), intra-pleural administration of blood and other fluids, brachial plexus injury, local cellulitis with septicemia and local hematoma.

Case report

C.E.A., born 4/29/63, was admitted to Children's Hospital for the third time at the age of seven months. The infant, weight eight pounds, was the product of a normal full-term delivery. Gastrointestinal problems were present from birth with recurrent episodes of constipation, diarrhea, abdominal distention and failure to thrive. A tentative diagnosis of total aganglionosis of the colon was made. At laparotomy, an occasional ganglion cell was found in the cecum but no ganglion cells were found distal to this point. An ileostomy was performed with a colectomy planned for a later time. Some difficulties were encountered in the postoperative period, but essentially the patient did well and gained weight slowly.

The present admission was for the purpose of performing a modified Duhamel procedure with a side to side ileocolostomy. This was done on 12/5/63, and the immediate course was excellent. However, on the fifth postoperative day, the patient was noted to be restless and serosanguineous fluid was draining from his incision, indicating some degree of dehiscence. Because of poor function of an intravenous cutdown in the arm, a left subclavian drip was started at 2:25 p.m. by a resident surgeon. A polyethelene catheter was threaded through the needle. This was done without apparent difficulty. The drip required frequent attention with some irrigation during the early evening. Around 4:00 a.m. the infant slowly became dusky and perspired profusely. This improved with oxygen and a semi-upright position. Albumisol, 25 cc. had been added at 3:30 a.m. These symptoms slowly but steadily progressed, and by 7:30 a.m. the respirations were rapid, the infant was struggling and was cyanotic if oxygen were not held directly over the face.

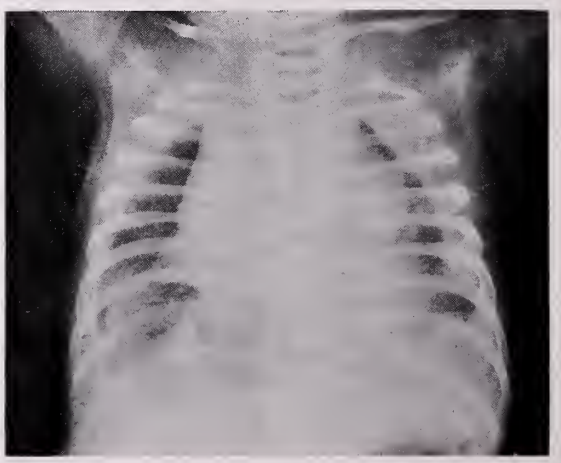

Fig. 1

*From the Departments of Radiology and Surgery, Children's Hospital, Denver.

A portable chest film at this time (Fig. 1) showed a large, bilateral symmetrical accumulation of fluid with compression of both lungs and widening of the mediastinal shadow. The mediastinal widening along with the distribution of the fluid suggested strongly that this was extrapleural.

The catheter was immediately removed and bilateral thoracentesis performed with removal of 220 cc. of non-bloody fluid, the color of which was the same as that being administered intravenously. The infant promptly improved with restoration of normal respirations and color.

A second film (Fig. 2), made five hours after thoracentesis, showed the chest was within normal limits, except for minimal pleural reaction at the right base.

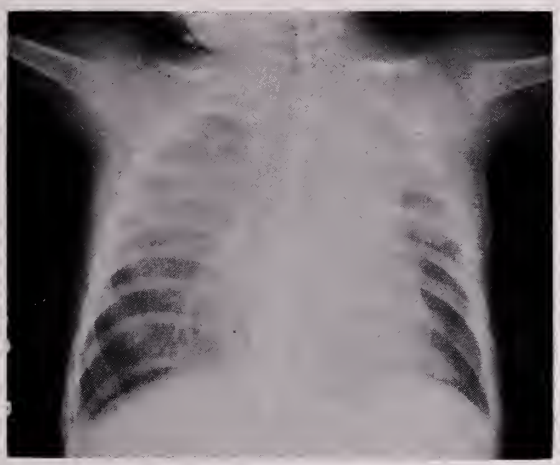

Fig. 2

Discussion

Although in the films it appears that the catheter follows the course of the subclavian and inominate veins, it is possible that the tip was never in the vessel lumen. As stated, difficulty was encountered with maintaining satisfactory flow.

From a strict radiographic standpoint, one cannot unequivocally say that this fluid is extrapleural, but its route of administration coupled with the widening of the mediastinum and the symmetrical distribution of fluid suggests that it is extrapleural. During the 19 hours the catheter was in place, the infant received a total of 630 cc. of fluid with 25 cc. of Albumisol being added at 3:30 a.m. Aspiration of the chest yielded 220 cc. Presumably, the balance was absorbed by surrounding tissue and from the pleural space. The Albumisol may have so increased the osmotic pressure that absorption was delayed, rather than the extravasation having started in the early morning hours.

Summary

A patient in which there was mediastinal and probable extrapleural accumulation of fluid following improper placement of a subclavian catheter is reported. •

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A medical potpourri

Compiled by Andrew M. Babey, MD, Las Cruces, New Mexico

1. "Hyperuricemia in a man, especially over the age of 45 or 50, is quite common; it occurs in about 7 to 10 per cent of individuals, whether they are rheumatoid or not, and does not necessarily mean that gout is present. Aspirin therapy will, of course, elevate the uric acid level moderately. Some physicians diagnose gout if the serum uric rises above 6 or 6.5 mg/100 ml and the patient has a few joint aches and pains. I believe this to be incorrect in most cases. . . . For some unknown reason RA and gout rarely coexist. Clear-cut proof of both diseases would be needed, by histological demonstration of a rheumatoid nodule and by a positive latex test as well as by biopsy evidence of a tophus containing sodium biurate crystals. Why these two diseases appear to be relatively mutually exclusive has, as far as I know, not been explained." The UCLA Interdepartmental Conference: Rheumatoid Arthritis and Its Systemic Manifestations. *Annals of Internal Medicine,* November: 1103, 1966.

2. "Indomethacin, although very helpful in a few RA patients, has generally been unpredictable and inferior to aspirin in our experience. The side effects, especially gastric irritation, generalized headache, occasional feelings of detachment or depersonalization, and lightheadedness, are bothersome." The UCLA Interdepartmental Conference: ibid., 1119, 1120.

3. "Medical therapy at the present time does not prevent the progression of the disease; although we can control the symptoms, the disease continues to gain ground. The medical profession has been very slow to accept the role of surgery in RA. It has been stated that patients do not do well after surgery, but this is not the case; we have performed over 500 operations without a mortality. Activity of the disease is not a contraindication to surgery, as previously believed. Actually, the sedimentation rate is of no concern; as long as the patient is not toxic and the medical consultant feels he can be operated on, surgery is indicated." The UCLA Interdepartmental Conference: ibid., 1120.

4. "A review of the pathogenesis of RA may be of value in order to understand the role of early surgery. The disease starts as a synovial swelling; it is this swelling that produces most of the trouble. (Actually, the disease should be called rheumatoid synovitis rather than arthritis.) The synovium goes from a single layer in thickness to about 1,000 times normal and distends or balloons out the joints. The synovium actually erodes through the extensor mechanism of the fingers; it sticks to and destroys the articular cartilage as pannus. It becomes so invasive that it eats away the subchondral bone along the edge of the joint."—The UCLA Interdepartmental Conference: ibid, 1120.

5. "One could say that, from the surgical point of view, RA is at about the stage that appendicitis was in 1900 when McBurney was thought mad when he advocated early removal of the appendix before it ruptured. At the present time we are saying that the synovium should be removed from these joints before it destroys them."—The UCLA Interdepartmental Conference: ibid, 1121.

6. "Strangely, the kidney is almost invariably unaffected in rheumatoid arthritis."—The UCLA Interdepartmental Conference: ibid, 1128.

7. "Experience has shown that to ignore public opinion is to court disaster. This has been a difficult lesson not only for the profession but also for the individual physician to learn."—Pertinax: "Without Prejudice." *British Medical Journal,* November: 519, 1966.

8. "I think doctors are the least fitted to prescribe for society anything beyond measures for preventive and curative medicine. Doctors as a class are, I believe, far more immature than other professional groups."—Pertinax: ibid, 519.

9. "Unless society is prepared—which it is not—to have its members trained with the care extended to a potential Derby winner or a professional footballer, health is an illusion made to sound more convincing by calling it 'positive health.' The great

majority of people in an industrial civilization live and work in conditions which make 'health' a compromise between what might be and what is. I have to breathe in the exhaust gases of cars in the streets and take the consequences. I can't control the weather and I can't—except in rare leisure moments—get out into the country or to the seaside. I am condemned from the moment of birth to bear with my own temperament—and thereafter with the temperaments of others as well. Life, even if it is not short and brutish, is bound, for most of us most of the time, to be an uneasy interlude between birth and death."—Pertinax: "Without Prejudice." *British Medical Journal,* August 13: 406, 1966.

10. "At the risk of being misunderstood I would say we may be becoming too solemn about medical care and the responsibility of the medical man. In our secular society he is beginning to be a sort of universal aunt with a slight odour of sanctity hanging round him and an amount of special knowledge and skills which are being used for purposes outside those for which he is trained."—Pertinax; ibid, 406.

11. "A good deal of superciliousness
Is based on biliousness.
People seem as proud as peacocks
Of any infirmity, be it hives or dementia praecox."

—(Quotation from Ogden Nash) Pertinax: "Without Prejudice." *British Medical Journal,* August 13: 406, 1966.

12. "Cerebral blood-flow is often critical in the aged, and many diseases may temporarily reduce it below the safety limit. To the quasi-physiological causes of falls and accidents already mentioned, then, must be added certain states of disease. Among them cardiovascular and cerebro-vascular insufficiencies rank high. Certain syndromes which are uncommon among young adults are often met with in geriatric practice. They include postural hypotension, 'silent' cardiac infarction, 'little strokes,' which are usually examples of internal carotid or basilar artery insufficiency short of actual thrombosis, and those transient attacks of disturbed consciousness which occur when old people occlude their vertebral arteries by throwing their heads backwards while reaching up to high shelves. Other common disorders which predispose to fall are vertigo, Parkinsonism, and locomotor disease and weakness generally."—John Agate, M.D.: "Accidents to Old People in Their Homes." *British Medical Journal,* October 1:785-786, 1966.

13. "No other branch of medicine is at the moment so dependent for its daily conduct upon applied biochemistry as the study of renal disease."—J. S. Cameron: Renal Disease—I, Growing Points. *British Medical Journal,* October 1:811, 1966.

14. "9. Under certain conditions, the serum K+ concentration may be spuriously elevated. This problem is encountered in the following situations:

1. Prolonged application of the tourniquet prior to ventipuncture.
2. Delay in separating serum from red blood cells and hemolysis of cells due to traumatic handling of the blood.
3. Thrombocytosis with liberation of K+ during the clotting process."

—Papper, S., Whang, R.: DM (Disease—A Month) June: 3-29, 1964.

15. "The paramount indication for adrenalectomy is disseminated breast cancer, and the natural history of the disease shows clearly that a 'solitary' metastasis is evidence of dissemination and that a metastasis remains 'solitary' for a short time only."—Sir Stanford Cade: Adrenalectomy for Disseminated Breast Cancer. *British Medical Journal,* September 10:615, 1966.

16. "Pre- and post-adrenalectomy management by cortisone is now fully understood and easily achieved. The operation presents no special difficulty in the hands of a surgeon of average skill; the operation mortality is now 1%. Life on cortisone is almost normal."—Sir Stanford Cade: ibid, 615.

17. "Survival for periods of up to twelve and a half years has been achieved with complete regression of skeletal and visceral metastases."—Sir Stanford Cade: ibid, 615.

18. "The day of the wealthy doctor has gone. In the past his favorite conception of himself was in the role of Robin Hood, who rooked the rich to spare the poor. And this was often what he did. But the patient (after recovering) was tempted from time to time to look upon the doctor rather as a Dick Turpin who said, 'Your money or your life!' And so the murmur grew with insistence to a clamour that the charity of a Robin Hood and the threat of the Dick Turpin must come to an end."—Pertinax: "Without Prejudice." *British Medical Journal,* October 8:885, 1966.

EXTENDED CARE FACILITIES IN COLORADO

Name of Facility	No. Beds Certified
Golden Age Manor Nursing Home E. 3rd Ave. Bet. Galena and Geneva Aurora 80010	142
Boulder Manor Nursing Home, Inc. 4685 Baseline Road Boulder 80302	50
Foothills Vista Nursing Home 4390 Baseline Road Boulder 80302	84
Mesa Vista Sanatorium, Inc. 1990 Alpine Street Boulder 80302	90
Brighton Park Manor Nursing Home 18th Avenue and Egbert Street Brighton 80601	16
Ebenezer Lutheran Home & Hospital Brush 80723	120
Sunset Manor 2200 Edison Street Brush 80723	45
Colonial Columns Nursing Home 1340 East Fillmore Street Colorado Springs	100
Fairview Care Center 825 South Hancock Colorado Springs	69
Garden of the Gods Nursing Home Columbia Street and Lois Lane Colorado Springs	52
Homestead House 1440 East Fountain Colorado Springs	46
Pikes Peak Manor, Inc. 2719 North Union Boulevard Colorado Springs 80909	125
Prospect Lake Nursing Home 1420 East Fountain Street Colorado Springs	50
Terrace Gardens Nursing Home P.O. Box 4184 Colorado Springs	64
Adams Manor 7150 Poplar Street Commerce City 80022	116
Southwest Memorial Hospital P.O. Box 1508 Cortez 81321	19
Del Vista Nursing Home Route 2, Box 143 Delta 81416	50
Asbury Circle Nursing Home, Inc. 4660 East Asbury Circle Denver 80222	82
Bella Vita Towers, Inc. 4450 East Jewell Avenue Denver 80222	136
Beth Israel Hospital & Home Society 1601 Lowell Boulevard Denver 80204	49
Charm Cove Nursing Home 1825 South Federal Boulevard Denver	46
Ivy Manor Nursing Home 2939 Vallejo Denver	104
Park Central Nursing Home 745 East 18th Avenue Denver	....
Park Side Nursing Home 1667 St. Paul Street Denver	....
Park View Manor Nursing Home, Inc. 3105 West Arkansas Avenue Denver	70
Valley Hi Nursing Home 4686 Asbury Circle Denver	80
Eventide of Durango Nursing Home Route 1, Box 117M Durango 81301	59
Weisbrod Memorial Hospital and Nursing Home 1208 Luther Street Eads 81036	9
Lakewood Nursing Home 5545 West 14th Avenue Edgewater 80215	42
Sands House 5261 West 26th Avenue Edgewater 80214	50
Cherry Hills Manor 3575 South Washington Street Englewood 80110	....
Magdalene Gardens Convalescent and Nursing Home 3131 South Federal Boulevard Englewood 80110	90
Swedish Nursing Home 501 East Hampden Englewood 80110	32
Temple Rest Home, Inc. 3401 South Lafayette Englewood 80110	43
Columbine Nursing Home 421 Parker Street Fort Collins 80521	40
Eventide Rest Home 100 Lemay Avenue Fort Collins 80521	74
Golden West Nursing Home, Inc. 1005 East Elizabeth Street Fort Collins 80521	50
Pioneer Nursing Home 811 East Myrtle Street Fort Collins 80521	35
South Eventide Rest Home 1000 Stuart Street Fort Collins 80521	22
Fort Morgan Community Hospital 1000 Lincoln Street Fort Morgan 80701	20
Glen Valley Nursing Home 21st and Blake Street Glenwood Springs 81601	43
Teller Arms Nursing Home 2425 Teller Avenue Grand Junction 81501	80
Weld County Nursing Home P.O. Box 758, 1534 11th Avenue Greeley 80631	97
Haxtun Community Hospital and Nursing Home Box 308 Haxtun 80731	15
Sheridan Manor Nursing Home 816 South Interocean Holyoke 80734	48
Casa Del Nursing Home 1325 Everett Court Lakewood	....
Harvest House Nursing Home 1685 Eaton Street Lakewood 80214	44
Westland Manor Nursing 1150 Oak Street Lakewood 80215	135
Mennonite Nursing 10th and Lincoln La Junta 81050	44
St. Vincent's Hospital West 4th and Washington Streets Leadville 80461	10
Cherrelyn Manor Nursing Home, Inc. 5555 South Elati Street Littleton 80120	186
Littleton Manor, Inc. 5822 South Lowell Way Littleton 80120	45
Eventide of Longmont 1800 Sanborn Place Longmont 80501	101
North Shore Manor Nursing Home Loveland 80537	153
Sierra Vista Loveland 80537	98
Walbridge Memorial Hospital Meeker	20
Pine Haven Nursing Home P.O. Box 117 Morrison	100
Palisades Nursing Home P.O. Box 308, 131 East Main Palisade 81526	53
Highland Park Nursing Home 1610 Scranton Street Pueblo	150
New Haven of Rest Nursing Home 1601 Constitution Road Pueblo	95
Pueblo Manor 2611 Jones Avenue Pueblo	55
Shamar Nursing Home 1201 West Abriendo Pueblo	42
Pioneers Memorial Hospital 12th Street and Washington Ave. Rocky Ford 81607	37
Rose Arbor Nursing Home 1420 South 3rd Avenue Sterling 80751	100
Sterling Heights Nursing Home 710 South 6th Avenue Sterling 80751	86
Colorado State Home for the Aged 409 Benedicta Avenue Trinidad 81082	55
Colonial Manor Nursing Home 7490 Lowell Boulevard Westminster 80030	137
Christopher House Nursing Home 6270 West 38th Avenue Wheat Ridge 80033	84
Columbine Nursing Home, Inc. 3835 Harlan Street Wheat Ridge 80033	103
Plaza Park Nursing Home 7045 Stuart Street Westminster 80030	102
Mountain Vista Nursing Home (Baptist Home Assn. of Colorado) 4890 Tabor Street Wheat Ridge 80033	90
Schilling Nursing Home 3315 Sheridan Avenue Wheat Ridge 80033	....
Park View Nursing Home 323 West 9th Avenue Yuma 80759	50

COLORADO

Denver Doctor Selected for Modern Medicine Distinguished Achievement Awards

Ward Darley, M.D., Consultant to the Executive Director, Association of American Medical Colleges, has been named a recipient of the 1967 *Modern Medicine* Awards for Distinguished Achievement presented to physicians and scientists who have made outstanding contributions to the medical profession. The recipients were selected from hundreds of nominations made by deans of medical schools, executive officers of national medical organizations, physicians and members of the *Modern Medicine* editorial board.

Dr. Darley received the award in recognition of his leadership in directing the Association of American Medical Colleges and expanding its scope, thereby augmenting the advancement of medical education in the United States.

Dr. Darley has long championed research as the foundation for change in education, and among the key research projects he helped foster in his years with the AAMC were studies of administration and financing of medical schools, of student finances, and of medical manpower.

NEVADA

Nevada Governor guest speaker at Aces and Deuces Luncheon

Guest speaker and official greeter at the Aces and Deuces luncheon in the Dunes Hotel during the AMA's 20th Clinical Convention, Nov. 27-30, was the governor of Nevada, Grant Sawyer (c), who was welcomed to the meeting by Dr. Wesley W. Hall (l), Reno, Nev., chairman of the AMA Board of Trustees, and Dr. Leslie Moren, Elko, Nev., president of the Aces and Deuces. The organization is comprised of medical associations which have only one or two delegates to the AMA.

AMA Volunteer Physicians for Viet Nam

Kirk V. Cammack, M.D., of Las Vegas, Nev., was one of the fifteen physicians who went to South Viet Nam in December to treat civilians under the AMA Volunteer Physicians for Viet Nam program.

AMA Volunteer Physicians for Viet Nam is a program for supplying medical care to the civilian population of South Viet Nam through the volunteer services of U. S. physicians. It is administered by the American Medical Association and financed by the United States Agency for International Development. Volunteer physicians serve a 60-day tour of duty at one of 18 provincial civilian hospitals in South Viet Nam. Their services are entirely unpaid except for transportation costs and an expense allowance of $10 a day.

A serious shortage of native physicians exists in South Viet Nam. Of the approximately 1,000 Vietnamese physicians nearly 900 are in the armed forces, leaving only about 100 to care for the health needs of 16 million people.

UTAH

Utah State Health Director Honored

G. D. Carlyle Thompson, M.D., Director of Public Health at the Utah State Department of Health, received the McCormack Award for outstanding public health service at a recent meeting of the Association of State and Territorial Health Officers.

The criteria for receiving the award are that the recipient must have been in public health for 25 years or more, at least 10 of which shall have been as a state health officer; and must have one or more major accomplishments to his credit in public health administration.

USMA Briefs

The Davis County Medical Society, a component society of the Utah State Medical Association, has become the eleventh society to organize in the state. The new society has 26 members.

Dr. Ralph C. Peterson, Clearfield general practitioner, has been elected president for the year 1967. Other officers include: Dr. David H. Wray, Bountiful general practitioner, president-elect; Dr. Ute Knowlton, Kaysville general practitioner, secretary; and Dr. Robert Bitner, Layton general practitioner, treasurer.

Dr. Noall Tanner, Layton surgeon, has been elected councilor to the USMA, and Dr. J. E. Trowbridge, Bountiful general practitioner, is a member of the grievance committee. The three delegates to the USMA are Drs. Robert Kelly, Layton general practitioner; George Snell, Kaysville general practitioner; and David Wray.

MEETINGS

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL

April 10-12, 1967

18th Hahnemann Symposium

EPITHELIAL-MESENCHYMAL INTERACTIONS

Raul Fleischmajer, M.D., Director

Note: For further information, please contact the Director.

* * * *

Prevention of Blindness 1967 Conference

"Setting Sights for Sight Saving" is the theme of the 1967 Annual Conference of the National Society for the Prevention of Blindness, Inc., which will be held April 12-14, at the Christopher Inn, Columbus, Ohio. More than 400 professional and volunteer workers in the prevention of blindness field are expected to attend.

During the conference distinguished members of the medical and allied professions from across the nation and throughout the world will participate in a program highlighting the latest developments in blindness prevention.

* * * *

SECOND ANNUAL CONFERENCE ON CARDIOVASCULAR DISEASES

March 23-25, 1967

Nugget Convention Center, Sparks, Nevada

The following subjects will be presented by outstanding guest speakers:

Congenital Heart Disease
Cardiac Pacemakers
Pulmonary Circulation
Arrythmias
Workshop on Resuscitation
Cardiac Monitoring and Coronary Intensive Care
Valvular Disease in the Adult
Valve and Arterial Prostheses
Electrophysiology of the Heart
Beta Adrenergic Blockade
Exercise Physiology

Sessions open to Physicians, Nurses, Veterinarians, and Technicians

* * * *

FOURTH ANNUAL ROCKY MOUNTAIN BIOENGINEERING SYMPOSIUM

University of Colorado Medical Center

May 1 and 2, 1967

This two-day meeting promises to be both informative and stimulating. Plan now to attend. $20 registration fee.

LARYNGOLOGY AND BRONCHOESOPHAGOLOGY

The Department of Otolaryngology of the Illinois Eye and Ear Infirmary and the College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in Laryngology and Bronchoesophagology from April 10 through 22, 1967. This course is limited to fifteen physicians and will be under the direction of Paul H. Holinger, M.D. It will be held largely at the new Illinois Eye and Ear Infirmary, 1855 West Taylor Street, Chicago, and will include visits to a number of Chicago hospitals. Instruction will be provided by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Postoffice Box 6998, Chicago, Illinois 60680.

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INTERIM SESSION, HOUSE OF DELEGATES OF UTAH STATE MEDICAL ASSOCIATION

Hotel Utah, Salt Lake City, Utah

March 22, 1967

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INTERMOUNTAIN PEDIATRIC SOCIETY

Las Vegas, Nevada

April 24-26, 1967

* * * *

American College of Physicians Postgraduate Courses, 1967

ARTHRITIS AND RELATED DISORDERS,
February 27-March 3,
New York University Medical Center

RECENT ADVANCES IN CARDIOVASCULAR DISEASE,
March 6-10,
The Mount Sinai Medical Center, New York, N. Y.

PHYSIOLOGICAL ASPECTS OF CARDIOPULMONARY DISEASE
March 13-17,
Yale University-New Haven Medical Center, New Haven, Connecticut

FUNDAMENTAL CONCEPTS OF GASTROENTEROLOGY
March 20-24
University of Michigan Medical Center, Ann Arbor, Michigan

PSYCHIATRY FOR THE INTERNIST,
March 27-31,
Wayne State University School of Medicine, (Lafayette Clinic) Detroit, Michigan

Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

THE EMANUEL FRIEDMAN LECTURE, THURSDAY, FEBRUARY 16, 1967

Sponsored by The Rocky Mountain Pediatric Society and the Colorado Chapter of the American Academy of Pediatrics

Children's Hospital, Denver

8:30 a.m.-12:30 p.m.

L-forms of Bacteria
Edward A. Mortimer, M.D.
University of New Mexico

Experience with Attenuated Vaccinia
C. Henry Kempe, M.D.
University of Colorado

Immunization
Henry Strenge, M.D.
Boulder

The Hospital Infectious Disease Committee
Stuart Dunlop, Ph.D.
University of Colorado

Arthropod Borne Virus Diseases in Colorado
James E. Froeschle, M.D.
Communicable Disease Center, Greeley
Joseph Butterfield, M.D.
Children's Hospital

Tuberculosis Control in Children
Carl Tempel, M.D.
Webb Waring Institute

Venereal Disease
Marvin Nelson, M.D.
Denver

Arthritis—Medical, Surgical and Pediatric

Since publication of our January issue, the meeting place for this symposium, sponsored by the Southeastern Chapter of the Colorado Academy of General Practice, has been changed from the Ramada Inn to the Minnequa Club at Pueblo, Colorado. Date of this meeting is Sunday, April 23, 1967. No registration fee.

Further information may be obtained from Samuel Nelson, M.D., 212 Colorado Building, Pueblo, Colo.

* * * *

Mid-Central States Orthopaedic Society

The 14th Annual Meeting of the Mid-Central States Orthopaedic Society will be held in Kansas City, Missouri, May 11-13, 1967, at the Sheraton-Prom Motel, Dr. Paul W. Meyer, President, presiding. Region VIII of the American Academy of Orthopaedic Surgeons has accepted an invitation to hold their general meeting in conjunction with that of the Mid-Central States group.

For further information, contact H. O. Marsh, M.D., Secretary, Mid-Central States Orthopaedic Society, 14 Douglas Parkway, Wichita, Kansas 67206.

* * * *

MONTANA MEDICAL ASSOCIATION 20TH INTERIM SESSION, HELENA

April 7-8, 1967

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

Dr. Robert V. Elliott, Denver specialist in internal medicine and assistant clinical professor of medicine on the volunteer faculty of the CU School of Medicine, has been elected 1967 president of the Medical Board of the University of Colorado Hospitals.

Re-elected as vice president of the board was Dr. E. Stewart Taylor, professor and chairman of the Department of Obstetrics and Gynecology.

Don L. Arnwine, director of University hospitals, serves ex-officio as secretary of the board.

* * * *

Research to Prevent Blindness, Inc., a national organization with headquarters in New York City, recently announced an annual unrestricted grant of $5,000 to the Division of Ophthalmology of the University of Colorado School of Medicine for the intensification of eye research during the coming year.

The gift permits CU eye researchers wide latitude in exploring promising new leads in preserving sight. It is the third in a series of $5,000 grants made by RPB to the ophthalmology division at the CU Medical Center.

RPB is a national voluntary research foundation which since 1960 has made annual unrestricted grants totaling $875,000 to 33 medical institutions and has produced more than $10 million for development of eye research facilities. Its goal is to eradicate the causes of diseases which are responsible for 80 per cent of all blindness in the United States.

* * * *

A formal request for $434,880 in State funds to initiate a School of Dentistry at the University of Colorado Medical Center in Denver was laid before the Joint Budget Committee of the State Legislature. The budget request follows action of the CU Board of Regents on Nov. 18 in approving and transmitting to State officials a two-year study of the costs and program of the proposed school.

The first step toward creation of the long-discussed school was taken by the Legislature in 1965 with a $50,000 planning appropriation later matched by a $50,000 grant from the Kellogg Foundation of Battle Creek, Mich. The first year's appropriation would include $149,880 for operations and $285,000 in capital funds for initiation of architectural planning. An additional $160,000 of private funds are budgeted for final program and curriculum planning during the 1967-68 fiscal year.

Annual operating costs of the school by the time it is in full operation with four classes enrolled in 1974-75 are estimated at $2,166,415 in 1967-68 dollar values.

Dr. William H. Hiatt, member of the volunteer faculty of CU School of Medicine, reported that Colorado and the nation are faced with a growing shortage of dentists and auxiliary dental professionals and that the shortage will become acute by 1970, a year before the proposed school could admit its first students. Between 1930 and 1964, he said, the ratio of dentists to population in Colorado worsened from 1 for every 1,363 persons in 1930 to 1 for 1,841 persons in 1964. The study also indicates that unless new dental schools are created, the Western states will have a deficit of 19,000 dentists and 4,000 dental hygienists by 1975, the year the proposed CU school would graduate its first class. There are now no dental schools between Kansas City-Lincoln-Omaha and the West Coast.

The requested budget of $434,880 for 1967-68 would permit the appointment of a dean and core staff-faculty of three persons to permit continuing work on the curriculum of the school, selection of equipment and instruments, initiation of faculty recruitment and establishment of academic and administrative policies.

The study tentatively proposes two additions be constructed to the present Medical Center complex to house the dental school: a basic sciences wing to the south of the old Colorado General Hospital, north of East Eighth Ave. at about Ash St.; and a dental clinics building to the north of the new Colorado General Hospital at about East 10th Ave. and Colorado Blvd.

* * * *

A gift of $1,000 toward educational assistance of students of medical technology has been made by the Colorado Society of Clinical Pathologists, a professional organization of Colorado physicians who specialize in pathology and laboratory medicine. The gift was made to the Medical Technology Education Fund, a non-profit student loan service established jointly in 1960 by the Colorado State Society of Medical Technologists and the society of pathologists.

The fund makes low-interest loans available to students enrolled in medical technology courses approved by the American Medical Association. Fourteen such courses are conducted in Colorado at hospitals in Denver, Pueblo, Colorado Springs and Greeley. Enrolled in the courses are college and university students who have completed three years of academic studies and spend a fourth year in clinical training at a hospital to obtain their B.S. degrees and qualify for registration as medical technologists.

University of Utah College of Medicine

Dr. Alexander M. Schmidt, assistant professor of medicine in the University of Utah College of Medicine, has been appointed Assistant Dean of the College, in addition to his other duties. Dr. Schmidt has been associated with the Medical College since receiving his M.D. degree here in 1955. He served his internship and residency in internal medicine at the University of Utah affiliated hospitals, and was appointed an instructor in medicine in 1962. In 1964 he was promoted to assistant professor.

He will serve as Assistant Dean on a part-time basis, and will continue his responsibilities as Director of the Medical College's Cardiovascular Laboratory, and Director of Planning for Cardiovascular Research. He also holds an appointment as instructor in the College's Department of Physiology.

OBITUARIES

Colorado

Dr. Atha Thomas died at Mercy Hospital on January 5, 1967, following a short illness. He was born at Brownsville, Tennessee, on October 12, 1897, the son of Spencer F. Thomas and Kate Fanning Thomas.

Dr. Thomas was educated in the public schools of Brownsville, Tennessee. Following his graduation from the Haywood County High School in Brownsville, he attended the University of Tennessee at Knoxville for a short time and then transferred to the University of Chicago, where he received a Bachelor of Arts degree in 1918. He received his M.D. degree from the University of Pennsylvania Medical School in 1922. He served a one-year rotating internship in the Robert Packer Hospital at Sayre, Pennsylvania and started his residency in orthopedic surgery at the Hospital for the Ruptured and Crippled in New York City. He continued his training in orthopedic surgery at Harvard University and Massachusetts General Hospital. He was certified by the American Board of Orthopedic Surgery in 1937.

Dr. Thomas entered the private practice of medicine in Denver in 1924 in association with the late Dr. S. Fosdick Jones. In 1927 he accepted a position as chief orthopedic surgeon for the Colorado Fuel, Iron and Steel Corporation. He resigned this position in 1929 and returned to Denver, where he practiced orthopedic surgery until the time of his death.

In addition to the active practice of his specialty, Dr. Thomas was quite active in medical and civic affairs in the City of Denver. At the time of his death he was an honorary staff member at St. Joseph's Hospital, Mercy Hospital, and Denver General Hospital. He was a member of the courtesy staff of St. Luke's Hospital and Presbyterian Hospital, and an active member of the Children's Hospital staff. He was also a consulting staff member at Fitzsimons General Hospital, the Denver Veterans Hospital, and an emeritus staff member of Colorado General Hospital. From 1929 until shortly before his death he served as a Clinical Professor of Orthopedics at the University of Colorado Medical Center.

Dr. Thomas was an active member of the Denver Medical Society, the Colorado Medical Society, the American Medical Association, and a number of national organizations in the field of orthopedic surgery. He was the author of a number of scientific papers in the special field of orthopedic surgery. For a number of years he was an active member of the Denver Board of Health and Hospitals, and at one time served as President of the Board.

In 1929 he was married to Dana Sexton of Hazelhurst, Mississippi. Following her death in 1946 he married the former Donna Maye Tossberg of Fort Collins, who passed away in 1966. He is survived by a son, a daughter, two sisters, and two brothers.

Montana

George A. Townsend, M.D., Pray, Montana, died in a Phoenix hospital on December 17, 1966. Dr. Townsend was born in Greenville, Ohio, on July 24, 1883. He received his M.D. degree from the Chicago College of Medicine and Surgery in 1912 and was licensed to practice medicine in Montana during October, 1912. During the 54 years since his licensure, he practiced general medicine and surgery in Park County. During various periods his office was located in Livingston, Pray, Chico, and Emigrant. Dr. Townsend was a member of the Fifty Year Club of the Montana Medical Association and had maintained active membership in his component medical society, the Montana Medical Association, and the American Medical Association since he began his medical practice.

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...is not news. What's news is that we've embarked on the most ambitious film program *for professional medical audiences* ever launched against a single disease. A half-million dollar film project is underway—with technical advice from the nation's leading medical authorities.

Five of these films are available now—
CANCER IN CHILDREN, DIAGNOSIS AND MANAGEMENT OF CANCER OF THE COLON AND RECTUM, ORAL CANCER, NURSING MANAGEMENT OF THE PATIENT WITH CANCER, and THE DENTIST AND CANCER. The balance will be released in 1967-1968.

As pioneers in the usage of medical films, we know their value as teaching tools. Our Units across the country know, too. Films are a vital part of their professional educational programs. We hope you will contact *your* local ACS Unit about this outstanding new series.

AMERICAN CANCER SOCIETY®

NATIONAL AFFAIRS

Report of the Actions of the House of Delegates of the American Medical Association 20th Clinical Conference, November 26-30, 1966, at Las Vegas, Nevada

The American Medical Association's 20th Clinical Convention, held November 26-30, 1966, in Las Vegas, Nevada, was a happy and productive one. The final registration was 11,226, which was a record high for any AMA Clinical convention. This included 4,574 physicians, which is the third highest physician registration at a clinical convention. The accommodations were excellent, the scientific assembly had by far the highest consistent attendance of any meeting that any of us had known.

The Las Vegas Convention Center is expanding daily, and by 1971 the city will provide between 30,000 and 35,000 very attractive rooms. Every effort is being made to have the Board of Trustees select Las Vegas for an annual session, preferably in 1971. All of us are aware that in the past there have been only four cities capable of handling 50,000 to 60,000 people who attend the annual session of the American Medical Association. These are New York City, Chicago, Atlantic City, and San Francisco, and none of these has the excellent accommodations that Las Vegas has. Most of the delegates felt that this city should be added to the limited circle of cities capable of accommodating the convention, and that all of us in this area would work diligently to bring the next uncommitted annual session to this fabulous city.

The headquarters of the House of Delegates and of the various Councils was at the Dunes Hotel and the nearby Caesar's Palace. These hotels and the Riviera, which was the headquarters for the Nevada State meeting, were the center for the business part of the assembly.

As is customary, the main meeting was preceded by meetings of the various specialty boards and a one-day session on the medical aspects of sports. This fine program has grown rapidly and attracts an increasing number of worthy groups. A session on Sunday, which covered a wide range of topics, was the eighth program of this nature. The participants, which included coaches, athletic directors, team physicians and educators, diligently attended all sessions. The morning session featured two forums: one on the preparation for international competition under the chairmanship of William D. Paul, M.D., of Iowa City; the other was presided over by Richard C. Schneider, M.D., of Ann Arbor, and was on the football nerve pinch. These sessions were very well attended and appeared to your

Roy D. F. Goddard of Albuquerque discussed the problems of preparing American athletes for high altitude competition, such as the 1968 Olympic Games in Mexico City. Problems of conditioning the athlete for winter sports was presented by our own Dr. Irvin E. Hendryson. His presentation was described by the local press as "magnificent."

The luncheon meeting featured a talk on the anatomy of boxing by Robert S. Rocke, M.D., of North Hollywood, California. This was extremely interesting and well received by all.

Two other forums, one on the classification of sports injuries, and the other on management of kidney injuries, covered most of the important topics. Dr. Fred Hein deserves a great deal of credit for the progress he has made in building this wonderful program which means so much.

The House of Delegates convened at 9:00 a.m. on Monday, November 28, and adjourned on the afternoon of Wednesday, November 30. I will attempt to summarize the actions taken by the House of Delegates.

In the opening address, Dr. Charles L. Hudson, AMA President, told the Monday opening session of the House that the need to improve existing services and establish new services for the total population should be a "top priority" of the medical profession. Actually, his talk, while presented very beautifully, was exactly what the American Medical Association has stood for since its inception in 1847.

Among the interesting actions taken was an amendment of the bylaws to require 25 members of the House of Delegates, acting for and in the name of not less than one-third of the delegates of state associations in order to call a special session of the House of Delegates. This appeared to be rather generally accepted and timely, and augments the safeguards existing in the present by-laws. When one considers the great impact the last special session had on medicare legislation, we can readily appreciate how much this privilege accords all of us.

Probably most meaningful to our area was education for family practice. Calling it a "document of major importance on a subject of vital significance to the health care of the American public," the House of Delegates endorsed the recommendations of the Ad Hoc Committee on Education for Family Practice and authorized the Council on Medical Education to develop and initiate plans for their implementation. The long report contained the following recommendations:

"A. Major efforts should be instituted promptly to encourage the development of new programs for the education of large numbers of family physicians for the future, as described in the body of this report. The educational programs should relate to all levels of medical education, including pre-medical preparation, medical school education, internship and residency training, and continuing medical education. Keynotes should be excellence comparable to programs in other specialties and

flexibility to permit the design of programs which will meet the needs and interests of individual physicians.

"B. Medical schools and teaching hospitals should be urged to explore the possibility of developing models of family practice, in cooperation with the practicing profession.

"C. New sources of financial assistance should be developed for the support of family practice teaching programs. Substantial funds should be made available for all aspects of the programs, including the conduct of the educational program, the recruitment and training of full-time faculty, the development of facilities and models of family practice, and the conduct of research in patient care and community medicine.

"D. Recognition and status equivalent to other medical specialties should be given to family practice. An appropriate system of specialty certification should be provided for those who have completed approved educational programs and have demonstrated their competence as family physicians. The graduate programs (i.e., internship-residency program) should be an integrated whole, evaluated for accreditation by one body rather than two.

"E. Careful attention should be given to other factors which should make the environment for family practice more favorable and serve as incentives to medical students and young physicians to enter this field.

"F. Careful study should be made of the effect of pre-medical programs and the admission procedures, curricula and student evaluation policies of medical schools upon the production of family physicians."

Delegates and other interested AMA members also attended an open hearing Tuesday morning on the report of the Citizens Commission on Graduate Medical Education, which is similar in many respects to the report of the Ad Hoc Committee on Education for Family Practice. The Commission report is still under study by the AMA Board of Trustees and Council on Medical Education. The House of Delegates urged every physician and medical society to study the report (commonly called the "Millis Report"), to evaluate it and to present comments and critique to the Board prior to the next session of the House.

This action, made possible by the AMA Council on Medical Education, has been a triumph for all family doctors. Many people in our state, at the present time, fill all of these categories and are setting standards which we all hope will give prestige to the men who are the backbone of our profession, and will recruit many younger people who we hope will become similarly dedicated.

Another important action was an amendment to the by-laws which restricts membership of the House of Delegates after the House goes to 250. The newly established ratio of delegates would be one delegate for each 1250 physicians in the state. The safeguard in this action is that no state will lose any of its present representation. Our delegation all agreed that this was significant and good legislation, because too large a group would make the House unwieldy and the individual state could, conceivably, lose its voice in finalizing the proceedings.

Billing and certification procedures under Public Law 89-97 and Title XIX received a great deal of comment.

The House adopted a resolution urging that the American Medical Association advise the Department of Health, Education, and Welfare that the present requirements for certification and recertification have proven highly objectionable, unnecessary, and do not contribute to the quality of medical care.

It also recommended that the American Medical Association endeavor to bring about repeal of those portions of PL 89-97 in which the requirement for physician certification of medical necessity appears.

The resolution concluded by suggesting that the fiscal intermediaries and the American Hospital Association be advised that AMA will be available to assist in the development of appropriate amendments to this legislation. The purpose of this consultation would be to discuss the complexities of the present requirement and to invite participation in the development of amendments to the law which will be professionally acceptable and administratively workable.

The House also adopted a resolution declaring that the AMA strongly supports amendment of the Social Security Act, including Title XIX, to permit payments without assignments for medical care of the patient.

The House rejected three resolutions and one report defining usual, customary and reasonable charges. Instead, it adopted a resolution which said that the definitions of the words "usual," "customary" and "reasonable" be considered, within the fundamental framework of individual determination, the responsibility of the constituent state medical societies, with the understanding that the advice and counsel of the AMA be made available to those states requesting such assistance.

Another very important action, submitted by the Judicial Council on Utilization of Services of Laboratories Owned and Operated by Nonphysicians, urged that physicians should not utilize the service of any laboratory unless he has the utmost confidence in the quality of the service. This emanated from a resolution charging the Joint Commission of Accreditation of Hospitals with malaccrediting programs of laboratories supervised by individuals other than physicians. The details brought out in the reference committee and in its report took cognizance of the fact that whenever possible, laboratories should be headed by physicians, and all hospitals should work toward this. It was obvious that this was not always possible.

The House adopted a report of the Judicial Council which answered questions which have been raised about laboratory services. The report stated:

"Medical considerations, not cost, must be paramount when the physician chooses a laboratory. The physician who disregards quality as the primary criterion or who chooses a laboratory because it provides him with low-cost laboratory services on which he charges the patient a profit, is derelict in not acting in the best interest of his patient. However, if reliable quality laboratory services are available at lower cost, the *patient* should have the benefit of the savings."

On recommendation of the Board of Trustees, the House adopted a policy statement submitted by the Committee on Quackery. The statement notes "the position of the medical profession that chiropractic is an unscientific cult whose practitioners lack the necessary training and background to diagnose and treat human disease" and pointed out that "decisions by the nation's highest courts (justify) the medical profession's educational program of alerting the nation to the public health threat posed by the cult of chiropractic."

Our delegation felt that this was a very mild statement, because desperate patients could be exploited to the point where not only could they be deprived of possible medical help, but their finances could be unjustly depleted.

The House adopted a report by the Board of Trustees reaffirming the position of the AMA regarding the prescribing of drugs. The report states:

"The present policy of the American Medical Association is that physicians should be free to prescribe drugs generically or by brand name for *all* patients, whether they are paying, Medicare, or indigent patients. As is brought out in the reference committee, many doctors know that certain so-called brand name drug houses produce the poorest and the best products. Actually, the primary consideration of the whole discussion was that the drug being prescribed be in the best interest of the patient. Medical consideration must be paramount in selection of drugs. In addition, the physician also has an obligation to be mindful of the economic consequences of the treatment he prescribes. This seemed logical, because the best is not always the cheapest and generic names do not always guarantee the purest and the most potent drug."

There were six resolutions which concerned reimbursement under Title XIX. These were all very timely, and one resolution came from our delegation. The Reference Committee proposed a composite resolution stating:

"Resolved that the American Medical Association strongly support amendments to the Social Security Act, including XIX, to permit payment without assignment for medical care made by the patient." This was not as strong as most groups wanted. They thought individual billing should be paramount in the resolution. State laws and other impediments will make this a time-consuming but important principle. Developments on this legislation will be interesting to watch.

Another important piece of legislation in this category was that of reimbursement on statement. There was reaffirmation of a previous action by the house recommending that Public Law 89-97 under Title XVIII be amended to allow for payment to the patient by the government on the basis of a valid statement of services rather than a receipted bill. In the opinion of our delegation this might relieve the patient of responsibility justifiably his.

The House reaffirmed the 1956 policy statement on admission of alcoholics to general hospitals. The statement urged hospital administrators and medical staffs to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, with such admissions being made after due examination, investigation and consideration of the individual patient. The House, in Las Vegas, recommended more adequate implementation of the 1956 statement and urged that "insurance companies and prepayment plans be encouraged to remove unrealistic limitations on the extent of coverage afforded for the treatment of alcoholism."

Editorially speaking, this could also make insurance rates unrealistic and probably unacceptable to much of our population.

A very interesting resolution, No. 19, introduced from Florida, called for the admission of Past Presidents of the AMA to the House of Delegates, with the privilege of voice and vote. Much timely discussion followed introduction of this resolution because some states have had many presidents, and could have their voting delegation increased by as many as five. It was agreed, and the past presidents agreed, that they would be more influential and more helpful to the House by acting as individuals. This resolution, while having great merit in many respects, was disapproved.

A report of the Council on Medical Service proposed a commission for accreditation of voluntary health plans. The House agreed that this should be studied further, and the House asked the Council to render another report at the annual convention in 1967.

Payment for professional services occupied a great deal of the House's time. To clarify AMA policies as they now exist, the House adopted the following eight-point statement regarding payment for professional medical services:

"1. It is proper for the physician to establish the fee which he charges to any patient for the professional service rendered, with recognition of the fact that a duly constituted committee of his peers may appropriately review and pass upon the equity and justice of his charge.

"2. It is proper for third party agencies to make payment of professional medical fees in behalf of

patients, with recognition of the fact that the services of the physician have been to the patient and the liability for payment rests primarily with the patient or his family.

"3. It is proper for a physician to work cooperatively with other physicians in a team approach to the provision of medical service, with recognition of the fact that each cooperating physician is entitled to compensation according to the value of his services, and that the charges attributable to each physician's services shall be made clearly known to the patient.

"4. It is proper for a physician who provides personal supervision and direction for a physician-in-training to charge for the professional medical service rendered.

"5. A physician should not enter into a contract or agreement with a hospital whereby the hospital acts as the agent for a physician unless it is with the consent of the physician and of the medical staff. The physician and the medical staff, as principals, should not approve any contract whose terms or conditions are inconsistent with the Principles of Medical Ethics and established policy of the American Medical Association.

"6. Physicians, collectively in hospitals, may properly establish special medical staff funds, wholly under their own control, which they may support as they see fit and disburse as they may agree.

"7. Fees for professional medical services are properly paid only to the responsible physicians and may not be appropriated by any other person or agency.

"8. The physician is the sole arbiter as to the ways in which he may dispose of his professional income, without duress, consistent with the laws of the land and the Principles of Medical Ethics of this Association."

The Judicial Council, which had been asked to comment on use of the terms "ethical" and "unethical," submitted the following report which was adopted by the House:

"Historically, the term 'ethical' has been used in opinions and reports of the Judicial Council and in resolutions adopted by the House of Delegates to refer to matters involving (1) moral principles or practices; (2) customs and usages of the medical profession; and (3) matters of policy not necessarily involving issues of morality in the practice of medicine. The term 'unethical' has been used to refer to conduct which fails to conform to these professional standards, customs and usages, or policies, as interpreted by the American Medical Association.

"Unethical conduct involving *moral principles,* values and duties calls for disciplinary action such as censure, suspension, or expulsion from medical society membership.

"Failure to conform to the *customs and usages* of the medical profession may call for disciplinary action depending upon the particular circumstances involved, local attitudes, and how the conduct in question may reflect upon the dignity of and respect for the medical profession.

"In matters strictly of a policy nature, a physician who disagrees with the position of the American Medical Association is entitled to freedom and protection in his point of view."

Some delegates objected to this definition on the grounds that the terms are much harsher than are used in the code of ethics of the American Medical Association, and that the definition of "moral principles, values and duties" are subject to wide variation.

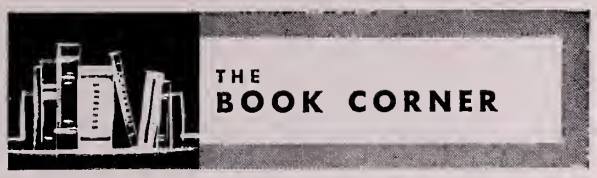
A long report of the Board of Trustees on continuing medical education was extensively reviewed by the reference committee and the basic principles endorsed by the House. In essence, the Board of Trustees will appoint a seven-member committee on continuing medical education. The whole educational program was reviewed carefully and the House warned that in the implementation of this committee important lines of authority be clearly defined, and that the Board consult with the Council on Medical Education in order to avoid duplication of responsibilities.

In essence, this was a good report because this phase requires cooperation between the Council on Medical Education, the Board of Trustees of the American Medical Association, and the consumers of this program. It was agreed that the Trustees, in consultation with the Council on Medical Education, resolve that they avoid duplication of responsibilities already assigned to the Council.

Many people had their feelings hurt, but we feel that nothing but good can come from this report.

One of the important actions of the House was adoption of a resolution written by Dr. Gatewood Milligan, one of Colorado's delegates. The resolution reaffirmed the principle that comprehensive medical care can and most often does center in the physician's office for a majority of citizens of the U. S. and resolved that new plans for medical care give this well established pattern first consideration and that a definite need be demonstrated before any other pattern be substituted for it.

Dr. Milligan did a fine job of presenting this resolution to the reference committee and it was through his outstanding efforts that this important resolution was adopted.



New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Appraisal of Current Concepts in Anesthesiology, v. 3: Edited by John Adrian. St. Louis, 1966, Mosby, 522 p. Price: $10.85.

The Artful Practice of Medicine: By William B. D. Van Auken. Springfield, Ill., 1966, Thomas. 115 p. Price: $6.50.

Cancer Chemotherapy: By Leonid F. Larionov. Tr. ed. Long Island City, N. Y., 1965, Pergamon. 544 p. Price: $22.50.

The Complete Psychological Works: v. 1, Pre-psycho-anlytic Publications and Unpublished Drafts: By Sigmund Freud. Tr. ed. London, 1966, Hogarth. 430 p. Price: $12.50.

Conflict in Society: Edited by Anthony De Rueck. (A Ciba Foundation Symposium.) Boston, 1966, Little, Brown. 467 p. Price: $13.00.

The Craft of Surgery: Edited by Philip Cooper. Boston, 1964, Little, Brown. 2 v. Price: $42.50.

Dermatologic Allergy: By Leo H. Criep. Phila., 1967, Saunders. 605 p. Price: $17.00.

Diseases of the Nervous System in Infancy, Childhood and Adolescence: By Frank R. Ford. 5th ed. Springfield, Ill., 1966, Thomas. 1416 p. Price: $29.50.

Forensic Psychiatry: By Henry A. Davidson. 2d ed. N. Y., 1965, Ronald Pr. 473 p. Price: $10.00.

Handbook of Ocular Therapeutics and Pharmacology: By Philip P. Ellis. 2d ed. St. Louis, 1966, Mosby. 224 p. Price: $9.75.

The Immunochemistry of Cancer: By Eugene D. Day. Springfield, Ill., 1965, Thomas. 170 p. Price: $6.75.

The Myocardial Cell: Edited by Stanley A. Briller. Phila., 1966, Univ. of Pennsylvania Pr. 374 p. Price: $8.00.

Obstetrics and Gynecology: By J. Robert Willson. 3d ed. St. Louis, 1966, Mosby. 776 p. Price: $15.50.

Proceedings of the Western Hemispheric Nutrition Congress; Nov. 8-11, 1965: Organized by the Council on Foods and Nutrition, American Medical Assoc. Chicago, 1966, AMA. 255 p. Price: Gift.

Psychiatric Emergencies and the General Hospital: Edited by the Joint Committee of the American Hospital Association and the American Psychiatric Association. Chicago, 1965, American Hospital Association. 21 p. Price: $1.25.

Psychiatry in the American Community: By Horace G. Whittington. N. Y., 1966, International Univ. Pr. 476 p. Price: $10.00.

Psychosomatic Management of the Patient with Malignancy: By Harry H. Garner. Springfield, Ill., 1966, Thomas. 136 p. Price: $5.75.

Pulmonary Diseases and Anomalies of Infancy and Childhood: By Milton I. Levine. N. Y., 1966, Hoeber. 368 p. Price: $12.00.

Recent Advances in the Diagnosis of Cancer: M. D. Anderson Hospital and Tumor Institute, 9th Clinical Conference. Chicago, 1966, Year Book. 310 p. Price: $12.00.

The Spontaneous Regression of Cancer: By William Boyd. Springfield, Ill., 1966, Thomas. 99 p. Price: $5.75.

Symposium on Methotrexate in the Treatment of Cancer: Report of the 2d symposium of the Royal Society of Medicine, London. Bristol, 1966, Wright. 120 p. Price: $10.00.

System of Ophthalmology, v. 9: Diseases of the Uveal Tract: Edited by Sir Stewart Duke-Elder. St. Louis, 1966, Mosby. 978 p. Price: $44.50.

Talking with Patients: By Brian Bird. Phila., 1955, Lippincott. 154 p. Price: $3.95.

Book Reviews

Questions and Answers in Orthopaedics for Students, Interns, Residents and Board Aspirants: By F. B. Goodman and G. R. Schoedinger. St. Louis, 1966, Mosby. 244 p. Price: $9.85.

The American Board of Orthopaedic Surgery realizes that training programs do not all present uniform coverage of orthopedics. The resident-physician authors of this review emphasize this point as they present a series of questions to point up blind spots of ignorance. Their main purpose is to "breed unrest and discontent within the mind of its reader." Usually, however, the Board aspirant already feels this "unrest and discontent" before he even picks up any book. Another purpose of this book might well be to jog readers into a more organized review in preparation for the Boards; it is organized into headings similar to the Board's written examination (adult orthopedics, anatomy, biomechanics, children's orthopedics, etc.).

Another nice feature is that the questions are worded "positively": A patient with a below knee and patellar tendon-bearing prosthesis had a "drop-off" at the time of take off; which of the following would be an unlikely cause? (a) toe lever arm too short, (b) flexible toe worn out, (c) heel length too short, (d) overpull of the quadriceps muscle group. Not only is d unlikely, but consideration of a, b and c flashes "positive associations" in the reader's mind, providing him with three reasons for a "drop-off."

The book is well organized; references as well as answers are simply found. It represents good coverage of the subject. If one is "unrested and discontented" before picking up this work, he will surely be more so afterwards, for the questions are not too quickly answered. Several board certified colleagues have conceded the questions are "very challenging." I am sure this book is the most up to date available on the subject.

Charles D. Magill, M.D.

Symposium on Surgery of the Ocular Adnexa: Transactions of the New Orleans Academy of Ophthalmology. St. Louis, 1966, Mosby. 245 p. Price: $16.00.

This issue covering the 14th annual session in February, 1965, of the New Orleans Academy of Ophthalmology is complete with roster of members and attenders of the meeting. A series of essays constitute a review of the plastic procedures in current use for the eyelids and orbit and the lacrimal system. No new material is given here that is not already found in the standard textbooks on the subject. Probably the most interesting part of the symposium is the roundtable discussions in which the points of view of the various participants as well as their personal evaluation of the procedures described are bandied about.

Albert P. Ley, M.D.

How to Reduce Road Accidents: By T. S. Skillman, M.A. (Cantab.), M.I.E.E. Los Angeles, 1965, The Re-Appraisal Society, 240 p., $5.50.

The Automotive Safety Committee of the Colorado Medical Society has had as its avowed and primary purpose the prevention of the fatal and devastating injuries (irreparable brain damage, the quadriplegias and paraplegias) that so often accompany automobile accidents. The serious nonfatal injuries outnumber the fatalities by more than two to one, and yet have a far more serious impact, financially and socially, upon the community than the fatalities.

The fatalities in the U.S.A. in 1965 numbered 49,000; the serious injuries resulting in total disability or requiring prolonged rehabilitation numbered about 100,000; the total of these is less than a tenth of the total number of injured, which is estimated by the National Safety Council as 1,800,000 and by the United Public Health Service as 4,000,000. And of course, these most serious (fatal and badly disabling) accidents are but a fraction of all accidents, most of which produce no injuries at all.

Author Skillman is obviously a man of practical affairs; physicist, successful manufacturer, author of many technical papers, with obvious familiarity in the fields of mathematical theory and psychology; yet there is an ethereal otherworldiness about this book, which leaves this reviewer very chilly indeed.

There have been four International Conferences on Alcohol and Road Traffic, yet the bibliography mentions these not at all. (One is mentioned as the source of a paper by Haddon.) Haddon's contributions in this field are listed in the bibliography, but seem not to have affected the author's thinking and are not mentioned in the text. The author has developed a theory of accident prevention, and would seem to be as elated over the prevention of any accident, even a minor fender-bender, as upon the prevention of the serious accident.

He divides drivers into Normal Drivers who have Ordinary Accidents, and Wild Drivers who have Violent Accidents.

On page 112, he writes, "Some of these wild men belong to the high vulnerability group. . . . They are enormously dangerous, and very unaware of the risks they are forcing on others. . . . The data on police arrests indicate that probably four out of five in this group, the high vulnerability wild drivers, are drunks." With this the reviewer agrees completely, and with the following from the bottom of page 37, "The mental abnormalities which must be associated with this fantastic unawareness make it nearly certain that these people will not be amenable to any appeal. We can be sure that the improvement we can get by trying to work on their minds will be disappointing."

This has never been stated better, and fortifies this reviewer's position that the only solution to these enormously dangerous men is to lock them up in special hospital-prisons, to rehabilitate them if we can, but in any case literally to keep them off the road until there is some real evidence that they ARE Normal Drivers.

But then on page 112 again, immediately following the part quoted above, comes the amazing following, "No individual stays in this group very long. He either reforms or is quickly eliminated by the police." Nothing could be farther from the truth, in the U.S.A., at least, and in the United Kingdom, from what many other authors have written.

Four out of five of these wild men, the drunks, do not reform, and they are not eliminated by the police. The police do all they can, they bring them to court and testify to the facts. But the courts slap the wrist, suspend the fine and the jail sentence, and these men come back as many as 20 times, frequently having been responsible for one or two traffic deaths, until finally they kill themselves in the final traffic "accident," more often than not taking another victim with them. *These* are the facts in the United States, and from what I read on the middle of page 160, and have read elsewhere many times, the same obtains in Great Britain.

The author completes his *naivete* on page 112 as follows, "Unfortunately, there are always new drunks and new wild youths, so that the group will always be with us. When we see a wild driver of this type we may at least comfort ourselves by the assurance that he won't last long. Either the police or an accident will get him, and we can afford to stay calm."

There is much more of this same, ". . . a thousand ordinary motorists averaging 5 to 10 vulnerabilities per day (a 'vulnerability' is an improper driving practice which makes one more likely to have an accident) will produce a far greater number of dangers that one habitually dangerous driver, even if the dangerous driver clocks up several hundred vulnerabilities a day. In other words, . . . the ordinary man, because of his prevalence, emerges today as the chief cause of accidents." Yes, this is all very true, if one becomes excited by just any accident, i.e., the millions of insignificant ones. We in Colorado are exercised about the fatal and devastating ones.

This book may well become the New Canon of a certain group of workers in the traffic safety vineyard, but this reviewer finds little of interest or value in it. He recommends to the author the careful reading of every single paper in the Proceedings of the first three International Conferences on Alcohol and Road Traffic (the Proceedings of the Fourth will soon be released).

Horace E. Campbell, MD

Human Development: Edited by Frank Falkner. Phila., 1966, Saunders. 644 p. Price: $20.00.

Twenty-nine authors contribute to the varied information contained in the volume "Human Development" edited by Frank Falkner, M.D., chairman of the Department of Pediatrics at the University of Louisville School of Medicine.

This is a heavy book, both factually and in terms of gross tonnage, but is clearly printed with uncluttered diagrams, charts and photographs.

The goal of publication of "Human Development" was to create a multichambered domicile for material of interest to all students of "human biology": physicians, basic scientists, paramedical investigators and teachers generally.

The subjects amplified ranged from the biologic principles of growth to development of immunity and no station stops are omitted on the fantastic timetable of the transition from the explosive moment of conception to the arrival at full maturity.

Deviations and aberrations along the way are well documented and as up-to-date as is possible in a kaleidoscopic world where established principles of biologic behavior and activity are negated in the blink of a computer's eye. Particularly of interest to the pediatrician, and well written, are the sections concerned with hormonal influences on human development by Henning Andersen, M.D., and the portion of the chapter on psychologic development of the child titled "Personality, Behavior, and Temperament" by Jerome Kagan, M.D.

Some portions of this comprehensive book are difficult to focus down upon because of the technical nature of their contents; for example, "Statistical Considerations" by Edmond Churchill, Ph.D. Others are muddied by the distracting employment of unnecessarily turgid and diffuse jargon which further confuses a complex thesis (Cognitive Development—John C. Wright, Ph.D.). Far too much space was devoted to the section "Cranial, Facial and Dentitional Development" by T. M. Graber, D.D.S., who splashes about happily and capably in his life's work and insists that the reader join him. This was a difficult book for the editor to synthesize from the torrents of appropriate literature and experience but the purpose and ambition behind its origin are well realized.

This is not a book that a pediatrician need feel obliged to include on his shelves but it certainly will find its place in the inner circle of literature in many other specialties and disciplines.

S. E. Wheelock, M.D.

Arteriography Principles and Techniques: Emphasizing Its Application in Community Hospital Practice: By Joseph L. Curry and Willard J. Howland. Phila., 1966, Saunders. 328 p. Price: $14.00.

This rather compact book emphasizes the application of arteriography in community hospital practice. The reason for this book is to explain arteriography because of its very rapid growth in recent years. These authors feel that it will be a common procedure used in most community hospitals throughout the country.

In the first few chapters, the authors carefully outlined the essential equipment and materials that are necessary as well as the proper technics, complications and precautions to carry out arteriography. This is simply, but rather completely, explained. They discuss and give their rules to increase the safety of the arteriography procedures as done by them in a general type hospital.

The next six chapters, which complete the book, discuss specific portions of arteriography, such as aortography, extremity arteriography, cerebral arteriography, renal arteriography and selective arteriography. The authors do not attempt to cover any work on cardiac catheterization or angiography. The pathological entities that can be expected in the various portions of the body that are investigated by arteriography are detailed in these final chapters and well explained and well documented and photographed.

This book is an excellent introduction to the fundamental principles and techniques involved in peripheral arteriography and can be recommended to anyone who wishes to start work in this field.

J. M. Grogan, M.D.

Colorado Medical Society
Colorado Winter Clinics
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THE WASHINGTON SCENE

A monthly news summary from the nation's capitol by the Washington Office of AMA

At a cost of nearly $1 billion, more than six million older persons got hospital and medical benefits during the first six months of the medicare program.

Social Security Commissioner Robert M. Ball expressed satisfaction with the overall operations so far of the health insurance progam for the elderly. But Ball warned of bed shortages in the nation's capital, in various New England states, and in most rural areas when a new medicare benefit of nursing home care went into effect Jan. 1. He estimated that 50,000 to 60,000 beds would be needed for extended care in nursing homes.

The Commissioner recommended a number of changes in the program:

—He urged that medicare benefits, which apply to persons 65 or older, be extended to 1.3 million disabled persons.

—He said the major improvement needed in the Social Security program is an "across-the-board" increase in benefits. Over-all benefits to be paid out in 1966 will rise from $21 billion in 1966 to $25 billion in 1967, he noted. President Johnson has announced he will seek a boost of about 10 per cent in Social Security benefits in the next Congress.

Ball's report on the first six months of medicare included:

—About 2.5 million elderly persons received free hospital care and 3.5 million benefited from medical services.

—Since medicare began July 1, 1966, hospital occupancy increased 5 per cent, as expected. Thirty per cent of all hospital beds were occupied by those 65 or older at the end of 1966.

—About 6,700 hospitals now are participating in medicare. About 250 hospitals were excluded because they did not meet minimum standards, and 75 hospitals because of racial discrimination.

—Payments to doctors and skilled medical personnel, such as radiologists, have taken too long.

—Overcrowding of hospitals in various "isolated" incidents.

—Almost all of the 17.5 million persons who signed up for additional medical insurance at a premium of $3 maintained their payments.

Seventeen hospitals in five states declared ineligible for federal funds because of failure to comply with provisions of the 1964 Civil Rights Act were granted public hearings by the Public Health Service in Alabama, Louisiana, Mississippi, South Carolina and Texas.

"Discriminatory practices found at the hospitals include the segregation of patients . . . an absence of negro physicians . . . and the segregation of training facilities," a PHS spokesman said.

Sen. George D. Aiken, R., Vt., proposed a nine-point program to liberalize benefits under the government's medicare plan for action by Congress. One would extend medicare drug coverage to prescriptions for old people whether or not associated with hospital confinement. A similar plan was included in a Senate-passed tax bill last summer but was killed in a Senate-House conference. Other Aiken proposals would eliminate deductible and co-insurance features, waiting periods and enrollment deadlines from the medicare plan, lower the 65 year age requirement for women to 62, and permit payment of medical specialist fees customarily provided by hospitals.

* * * *

Expenditures on prescription drug research and development reached a new high, but fewer new products actually reached the market in 1966 than during any single year on record.

C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association, said that the situation was attributable to several factors, including difficulties encountered under federal drug regulations. He said that the 1962 federal drug amendments had necessitated increasingly lengthy, costly periods for manufacturers to develop technical information required by the government. Stetler added that more time also has been required by the Food and Drug Administration for processing applications.

Total research and development expenditures during 1966 were estimated by Stetler at about $400 million. He said that only 11 basic new products had been marketed in the year, compared with 23 in 1965, 17 in 1964, 18 in 1963, 28 in 1962, and 41 in 1961. The peak year was 1959 when 63 new products were introduced.

A PMA survey shows that a principal focus of the million-dollar-a-day search by industry for new pharmaceuticals is on drugs acting on the central nervous system and sense organs. These include sedatives, stimulants, tranquilizers and analgesics.

Stetler said that such drugs accounted for $37.1 million or 19 per cent of the $194.7 million spent in 1965 on applied research and development by 42 of the nation's largest prescription drug firms.

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Versatility—The therapeutic efficiency, safety and convenience of Lomotil may be used to advantage alone or adjunctively in diarrhea associated with:

- **Functional hypermotility**
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Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are:

Children: Total Daily Dosage

3-6 mo. . . ½ tsp.* t.i.d. (3 mg.)
6-12 mo. . ½ tsp. q.i.d. (4 mg.)
1-2 yr. . . . ½ tsp. 5 times daily (5 mg.)
2-5 yr. . . . 1 tsp. t.i.d. (6 mg.)
5-8 yr. . . . 1 tsp. q.i.d. (8 mg.)
8-12 yr. . . 1 tsp. 5 times daily (10 mg.)
Adults: . . 2 tsp. 5 times daily (20 mg.) (or 2 tablets q.i.d.)

*Based on 4 cc. per teaspoonful.

Maintenance dosage may be as low as one-fourth the initial daily dosage.

Precautions: Lomotil, brand of diphenoxylate hydrochloride with atropine sulfate, is a Federally exempt narcotic preparation of very low addictive potential. Lomotil should be kept out of reach of children since accidental overdosage may cause severe respiratory depression. Recommended dosages should not be exceeded. Lomotil should be used with caution in patients with impaired liver function and in patients taking addicting drugs or barbiturates. The subtherapeutic amount of atropine is added to discourage deliberate overdosage.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

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A specially formulated vanishing cream base that is greaseless and odor free makes Neo-Synalar cosmetically appealing, and encourages greater patient cooperation.

controls the infection

stops the scratch

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of its components. **Precautions:** Neomycin rarely produces allergic reactions. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. **Side Effects:** Side effects are not ordinarily encountered with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Neo-Synalar under certain conditions. **Availability:** Neo-Synalar Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

References: 1. Pillsbury, D. M., Shelley, W. B., and Kligman, A. M.: A manual of cutaneous medicine, Philadelphia, Saunders, 1961, p. 79. **2.** Barber, M., and Garrod, L. P.: Antibiotic and chemotherapy, Baltimore, Williams and Wilkins, 1963, p. 111.

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20 ANNIVERSARY

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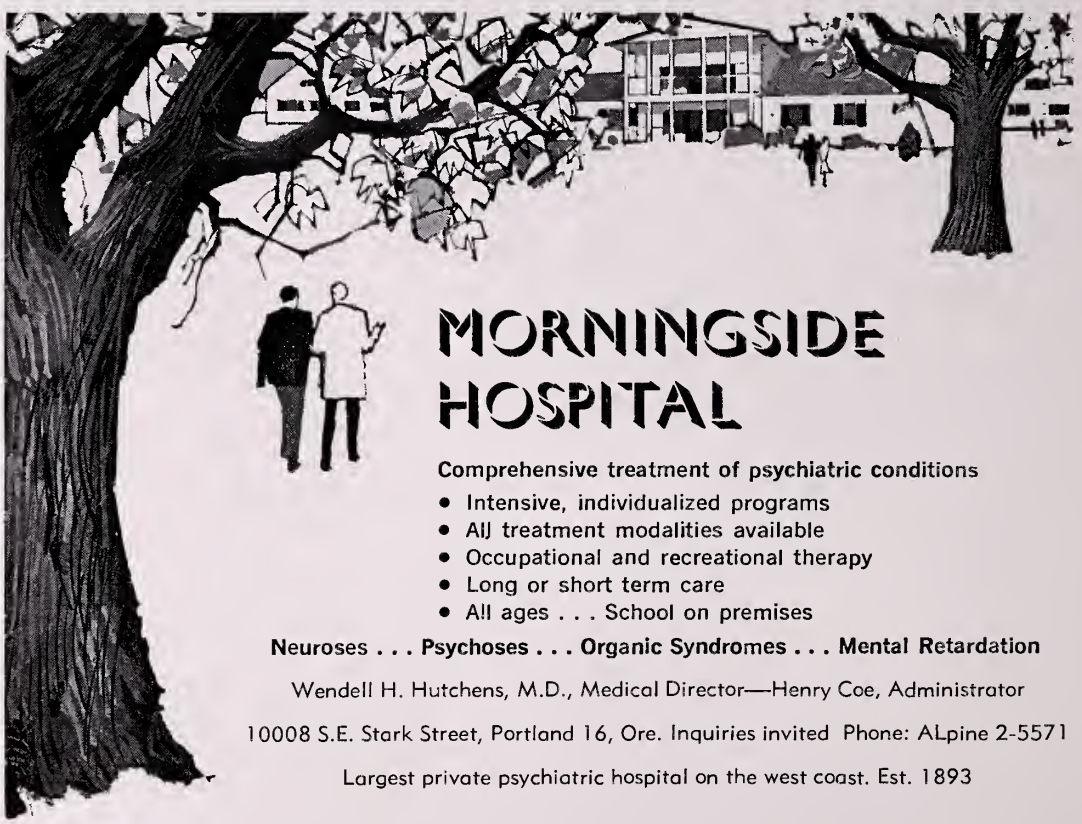

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Colorado Medical Society

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President: Myron C. Waddell, Denver.

President-elect: Henry H. Zeigel, Collbran.

Vice President: Eugene B. Ley, Pueblo.

Treasurer: William A. Day, Colorado Springs, 1968.

Constitutional Secretary: Marvin E. Johnson, Denver, 1969.

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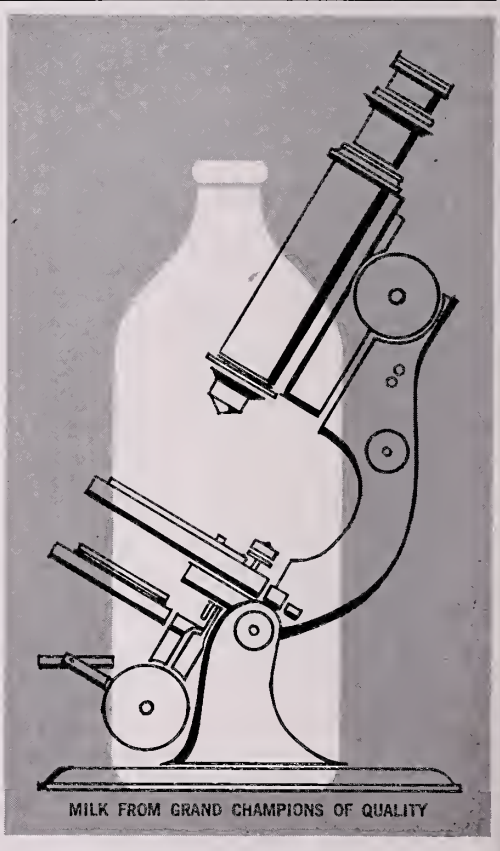

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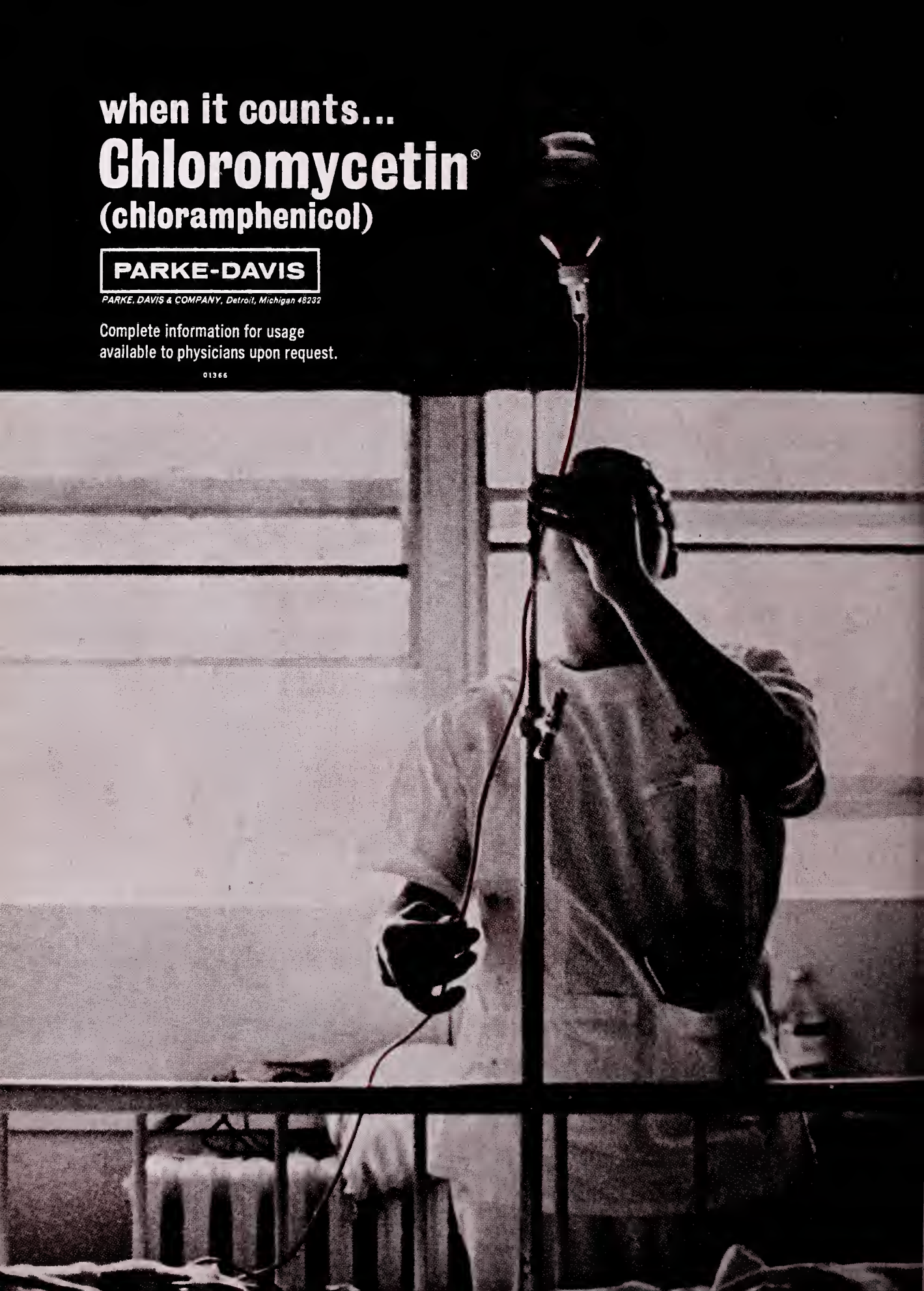

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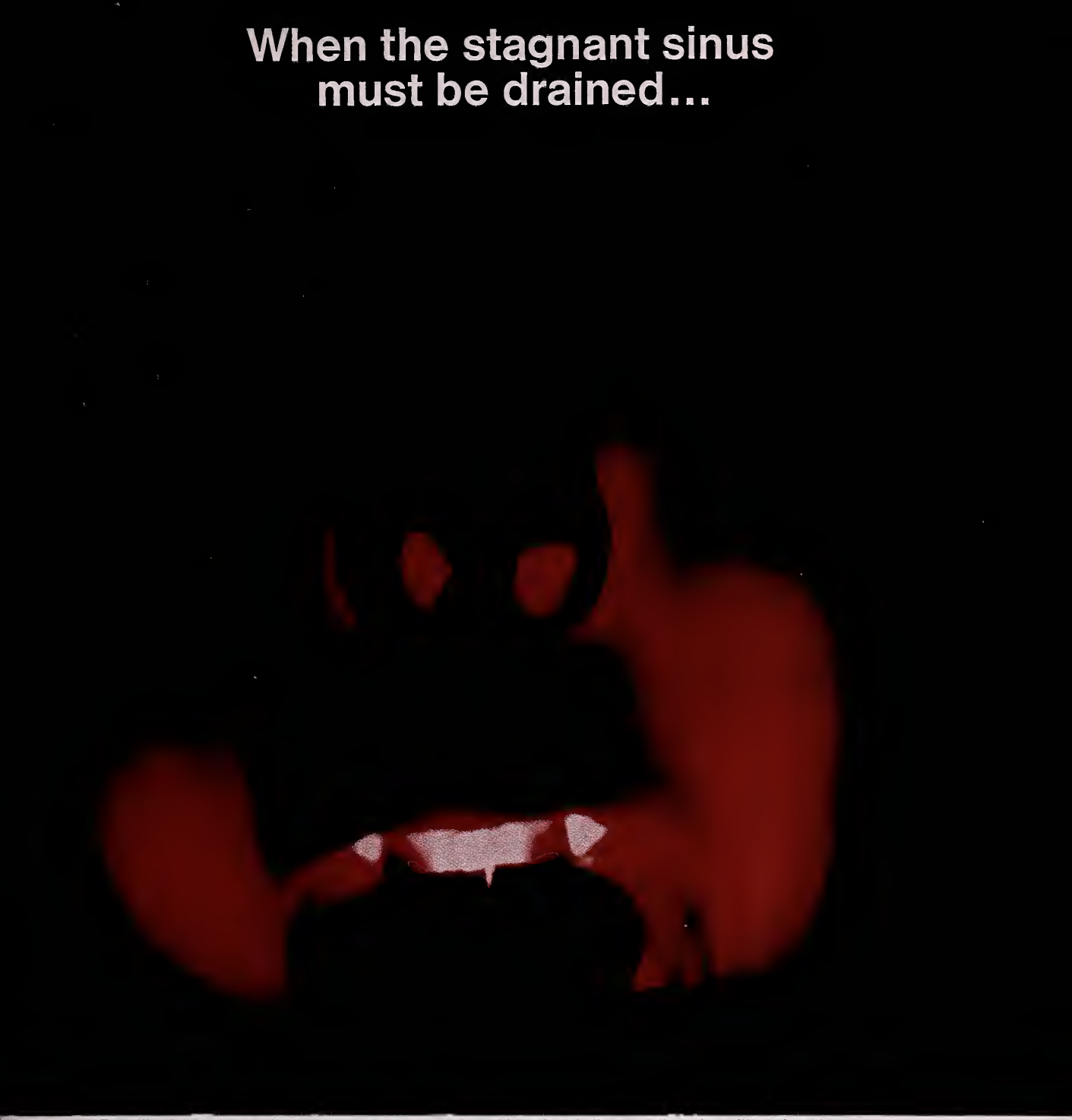

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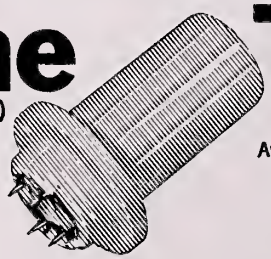

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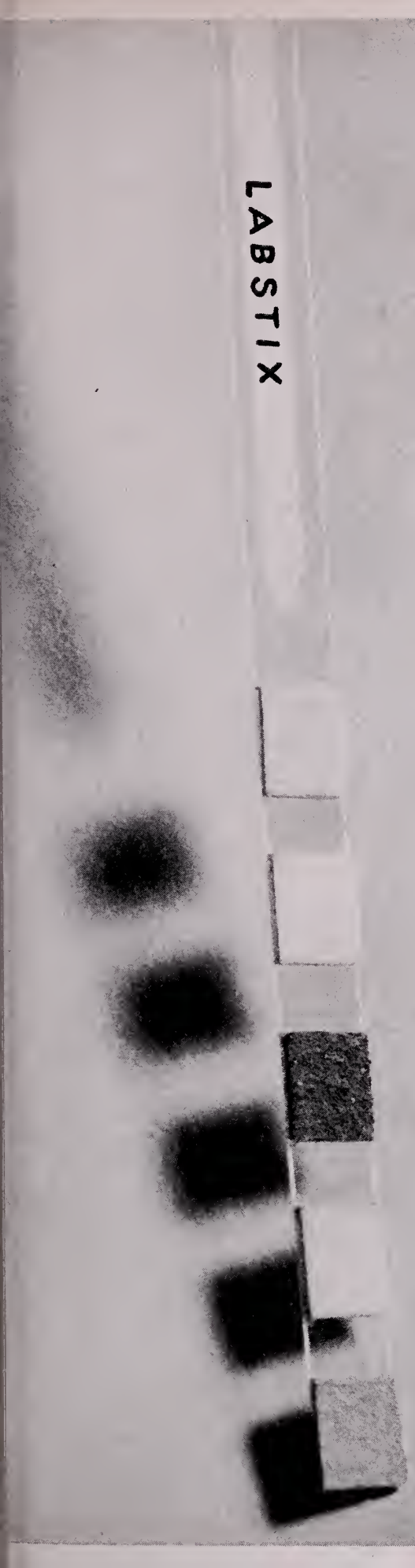

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Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	--	—
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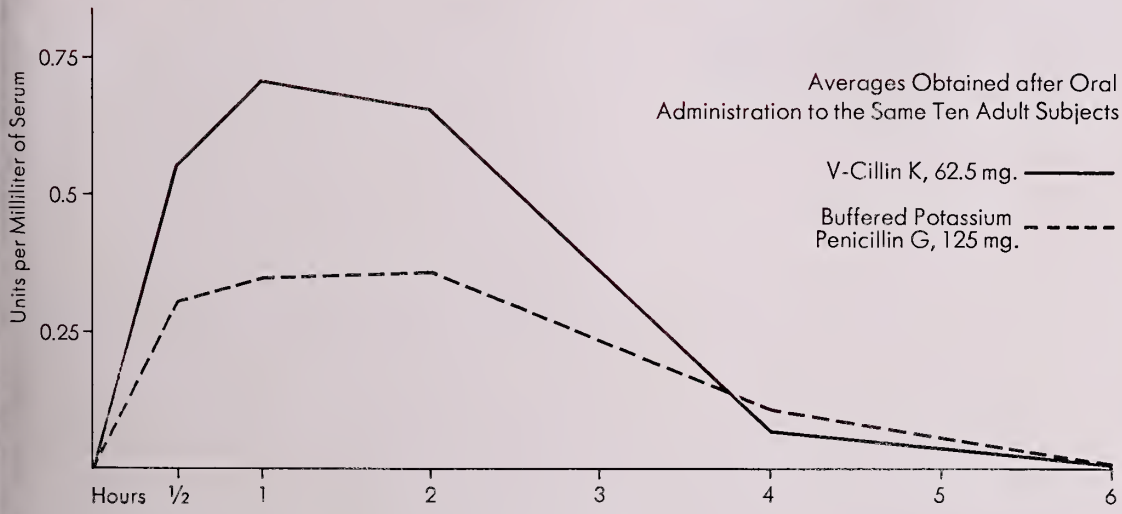

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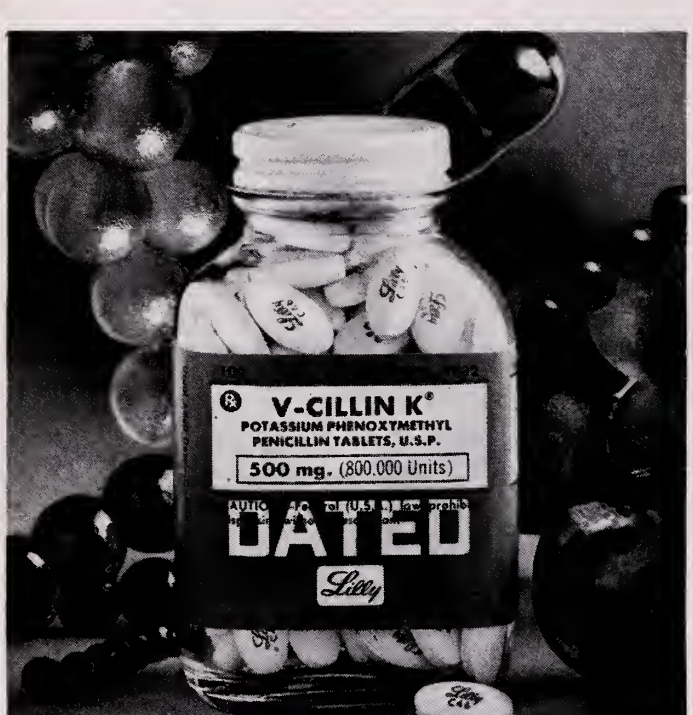

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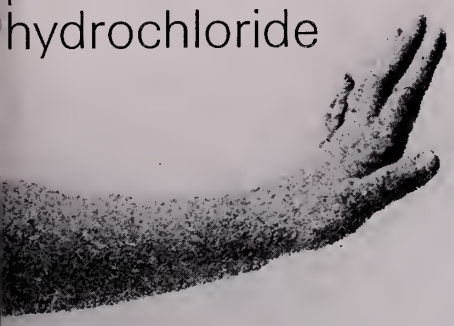

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Preludin® tablets of 25 mg.
Endurets® prolonged-action tablets of 75 mg.
Dosage: One 25 mg. tablet two or three times daily, or one 75 mg. Endurets tablet once daily.
Contraindications: Severe coronary artery disease, hyperthyroidism, severe hypertension, nervous instability, and agitated prepsychotic states. Do not use with other CNS stimulants, including MAO inhibitors.
Warning: Do not use during the first trimester of pregnancy unless potential benefits outweigh possible risks.
Precautions: Use with caution in *moderate* hypertension and cardiac decompensation. Excessive use may result in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations, or delusions.
Side Effects: Dryness or unpleasant taste in the mouth, urticaria, and (rarely) overstimulation, insomnia, dizziness, nausea, or headache.

For details, see full Prescribing Information. 6544-III (B)

Under license from Boehringer Ingelheim G.m.b.H.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, N.Y.

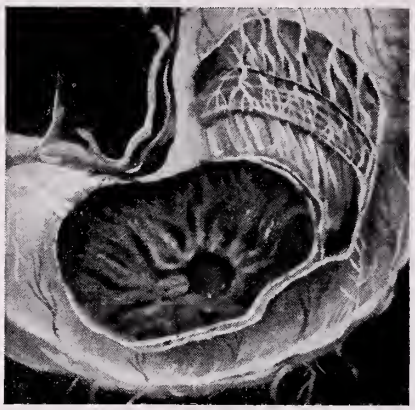
"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

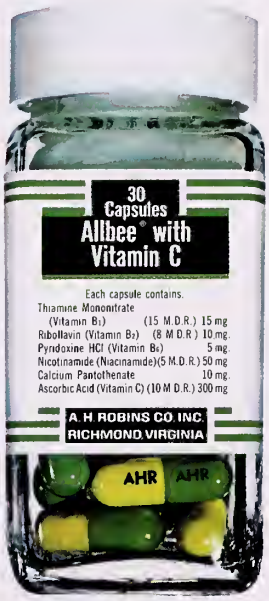
Stuart

Two ways to give your patients a month's therapeutic supply of vitamin C:

118 grapefruit or 30 Allbee® with C

Your patient would have to eat 118 medium-sized grapefruit (almost 4 a day!) to get as much vitamin C as is provided in just one bottle of 30 Allbee with C capsules (taken one capsule daily). In addition, each capsule supplies full therapeutic amounts of the B-complex vitamins.

Your patients can purchase Allbee with C capsules in the convenient bottle of thirty—a month's supply at a very reasonable price. Also the economy size of 100. Available at pharmacies everywhere on your prescription or recommendation.



A-H-ROBINS

A. H. Robins Company, Richmond, Virginia

the spasm reactors in your practice deserve

"the Donnatal® Effect"

	each tablet, capsule or 5 cc of elixir (23% alcohol)	each Extentab®
hyoscyamine sulfate	0.1037 mg.	0.3111 mg.
atropine sulfate	0.0194 mg.	0.0582 mg.
hysocine hydrobromide	0.0065 mg.	0.0195 mg.
phenobarbital	(¼ gr.) 16.2 mg.	(¾ gr.) 48.6 mg.

(Warning: may be habit forming)

Brief summary. Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.

A. H. ROBINS COMPANY, RICHMOND, VIRGINIA 23220

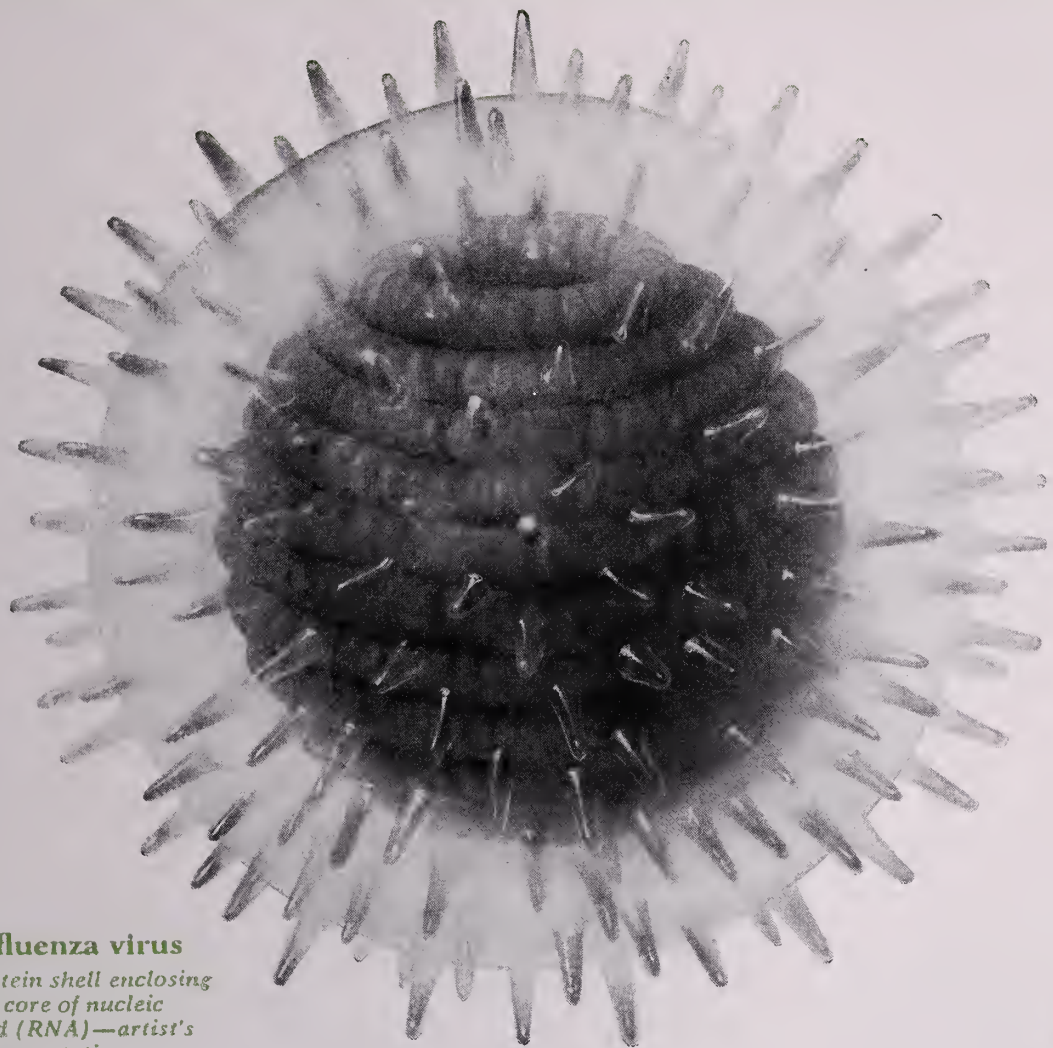
A·H·ROBINS

New from Du Pont

Symmetrel®

(Amantadine HCl)

he first oral chemical virostat for the prevention of influenza A_2



Influenza virus
Protein shell enclosing the core of nucleic acid (RNA)—artist's representation

The incidence of influenza A_2. In this country, where influenza is one of the leading causes of morbidity, influenza A_2 (Asian) continues to be a serious medical problem. In 1957 influenza A_2 was responsible for approximately 40,000 excess deaths in a three-month period. Since that year the most prevalent influenza virus has been A_2 (Asian).

What is Symmetrel®? "Symmetrel" (amantadine HCl) is a new synthetic chemical which acts as a molecular barrier to virus penetration. It provides for the first time specific oral medication for the prevention of respiratory infections caused by influenza A_2 (Asian) viruses—an entirely new approach in preventive medicine.

For prescribing information, see last page of this presentation

What Symmetrel® (amantadine HCl) means to you

...the first and only oral chemical agent to prevent influenza A_2 (Asian).

...not a vaccine or antibiotic, but a new synthetic chemical unrelated to any other chemotherapeutic agent.

...unique mode of action: prevents virus penetration of the host cell without affecting vital cell functions.

...specifically active against all influenza A_2 viruses tested to date.

...not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

...does not interfere with normal antibody response; acts in concert with pre-existing antibody.

What Symmetrel® means to your patient

...possible immediate influenza A_2 protection when taken following suspected contact.

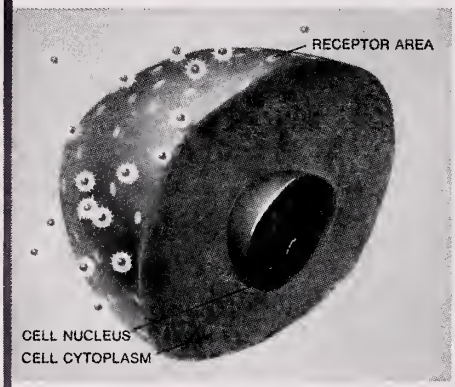
...may be particularly useful during outbreaks or epidemics and for high-risk patients in whom the occurrence of influenza A_2 is especially hazardous.

...a high degree of safety in clinical use.

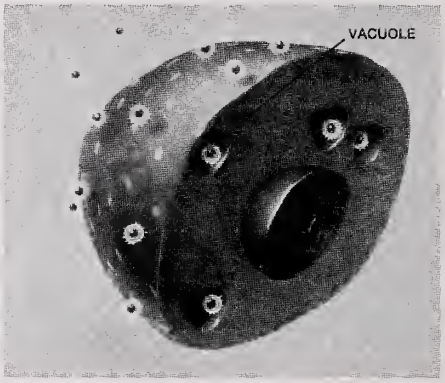
...simple once daily or b.i.d. dosage.

The mode of action of Symmetrel®

How the influenza virus invades and destroys the untreated cell



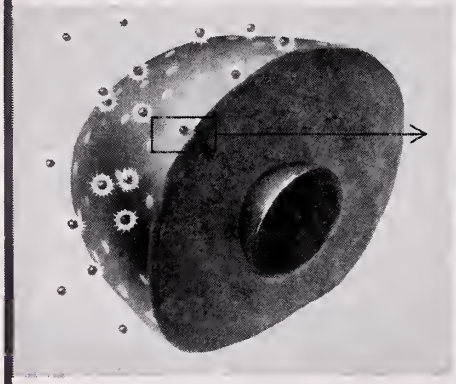
1 Viruses outside the cell attach themselves to specific cell receptor areas

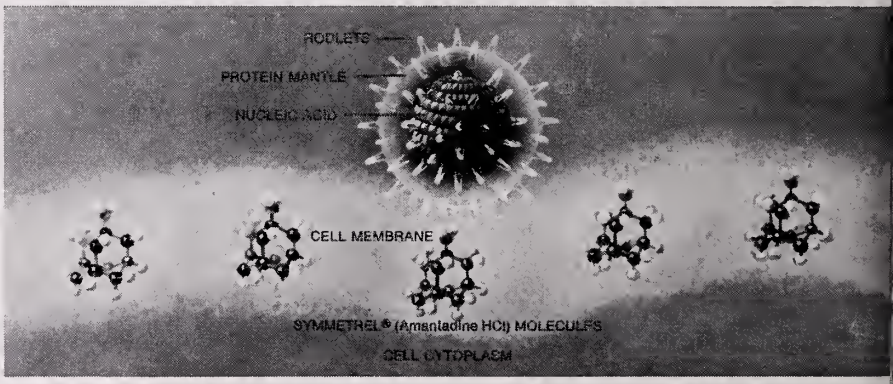


2 The virus is incorporated into a vacuole within the cell. From this vacuole the virus nucleic acid passes into the cell cytoplasm

3 The virus nucleic acid then directs the cell to produce both new virus nucleic acid and virus protein coat material which aggregate to form new virus particles. This process leads to the release of new virus particles and eventual destruction of the cell

How Symmetrel® (Amantadine HCl) prevents virus invasion[1]





Our current knowledge leads us to believe "Symmetrel" acts as a molecular barrier to influenza virus penetration. Shown here in a greatly enlarged section, "Symmetrel"—located at the cellular membrane—effectively prevents (blocks) virus penetration. Thus, "Symmetrel" does not directly destroy the virus particle but acting as a virostat prevents the cycle of virus penetration, virus replication, and cell destruction that is characteristic of virus invasion of animal cells (tissue). *Artist's conception based on current scientific knowledge.*

1. "Mode of Action of the Antiviral Activity of Amantadine in Tissue Culture", Hoffmann, C. E.; Neumayer, E. M.; Haff, R. F.; and Goldsby, R. A., Journal of Bacteriology *90*,623 (1965).

Safety of Symmetrel® Confirmed. When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Prescribing Information

Indications: "Symmetrel" is indicated for the prevention (prophylaxis) of influenza A_2 in persons of all age groups. Early use is recommended, preferably before or as soon as possible after actual or suspected contact with individuals suffering from influenza A_2. "Symmetrel" should especially be considered for high influenza-risk patient groups such as those suffering from chronic debilitating diseases and elderly persons.

Contraindications: Not indicated for the prevention of influenzal or respiratory illness other than influenza A_2 or for the treatment of established disease.

Warnings: Administration to patients with central nervous system disease, particularly geriatric patients with cerebral arteriosclerosis, and patients with a history of epilepsy or other "seizures," requires strict observation for possible untoward effects (see Adverse Reactions). Patients taking psychopharmacologic drugs, central nervous system stimulants, or alcoholic beverages should be observed for possible evidence of intolerance. Those patients who experience central nervous system effects or blurring of vision should be cautioned against driving or working in situations where alertness is important.

No teratogenic effects have been seen in reproductive studies in rats and rabbits. Studies in pregnant women have, however, not been done and use of this drug in women of childbearing age should be undertaken only after weighing the possible risks to the fetus against benefit to the pregnant patient. It should not be administered to nursing mothers since it is not known whether the drug is secreted in the milk.

Precautions: Ineffective against bacterial infections. Patients should be observed for idiosyncratic reactions as with all new drugs. Geriatric patients with pre-existing serious medical illnesses with mental or physical deterioration should be followed carefully medically while taking "Symmetrel." (See Adverse Reactions.)

Adverse Reactions: With higher than indicated doses manifestations of central nervous system effects such as nervousness, insomnia, dizziness, lightheadedness, drunken feeling, slurred speech, ataxia, inability to concentrate and some psychic reactions including depression and feelings of detachment were seen. Occasional blurred vision was reported at higher doses. Some of the milder and less pronounced symptoms above have been reported in a small number of patients taking the recommended dosage of 200 mg per day. Those were mostly transient and disappeared with continued administration of the drug. Some geriatric patients developed paranoid or hallucinatory behavior and became unmanageable while taking 200 mg daily. Medically unselected seriously deteriorated geriatric patients showed poor clinical tolerance after several weeks of daily dosing with 200 mg per day. One elderly patient with a history of prior cerebrovascular accident developed visual hallucinations and grand-mal convulsions while on drug at 800 mg per day. Some cases of dry mouth, gastrointestinal upset and skin rash and rarely, tremors, anorexia, pollakiuria, and nocturia have been also reported.

Safety: When used as indicated, is generally well tolerated. No kidney, liver, bone marrow, or hematological disturbances have been observed.

Dosage: *Adults:* Two 100 mg capsules (or 4 teaspoonfuls of syrup) as a single daily dose or the daily dose may be divided into one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

Children: 1 yr.—9 yrs. of age: Calculate total daily dose on the basis of 2 mg to 4 mg per pound of body weight per day (but not to exceed 150 mg per day). Daily dose, given as the syrup, should be given in 2 or 3 equal portions.

9 yrs.—12 yrs. of age: Total daily dose 200 mg given as one capsule of 100 mg (or 2 teaspoonfuls of syrup) twice a day.

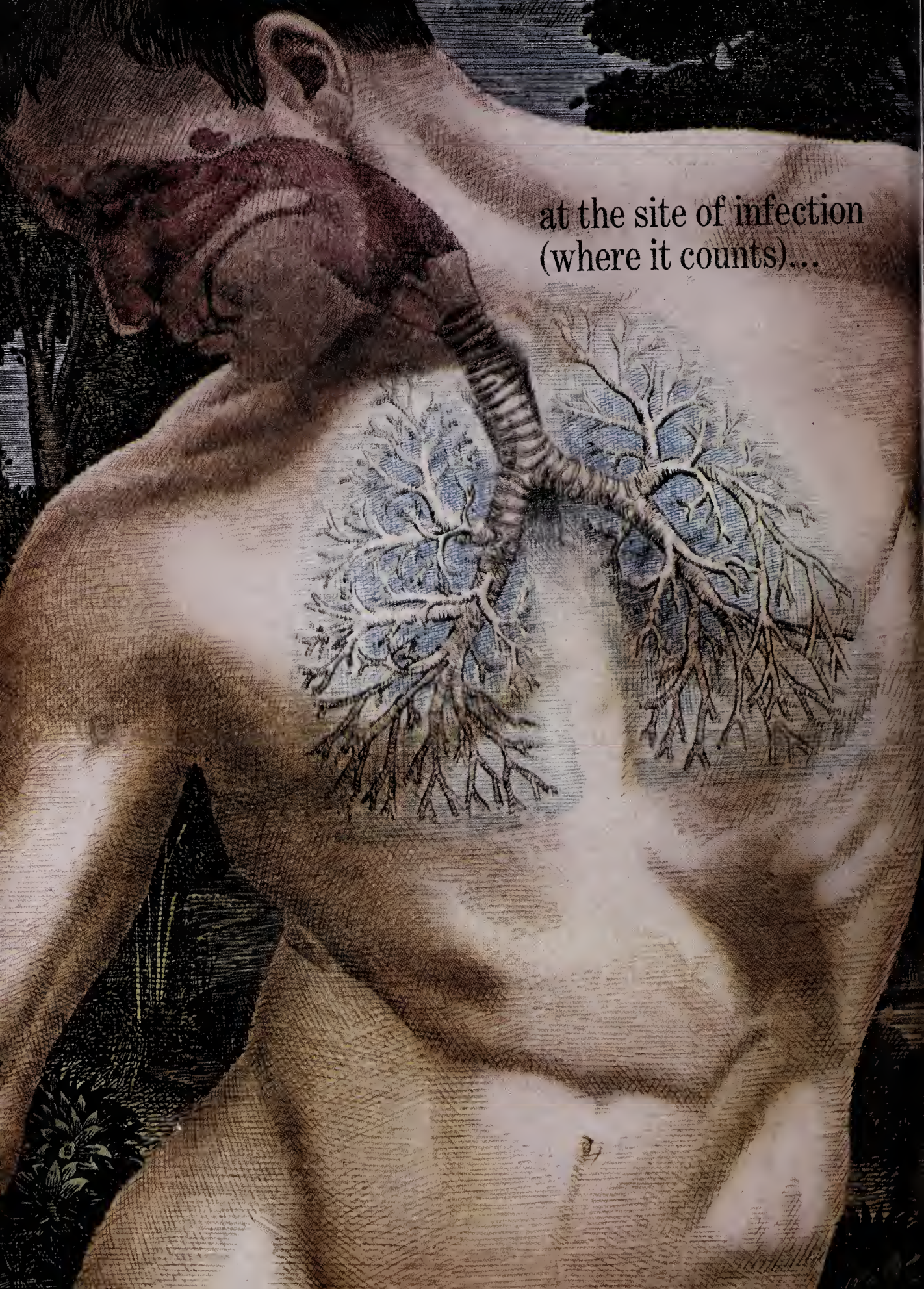
How Supplied: *Capsules:* Bottles of 100. Each red, gelatin capsule contains 100 mg amantadine HCl.
Syrup: Bottles of 1 pint. Each 5 ml (1 teaspoonful) contains 50 mg amantadine HCl.

DUPONT

Symmetrel®

(Amantadine HCl)

A molecular barrier to virus penetration


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone®

Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cephal flocculation and thymol turbidity tests, elevated serum glutan oxalacetic transaminase levels, peripheral eosinophilia, and n mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has r been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared wi those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilos and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penicil group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, w reported in 102 pediatric patients who received short-term (t day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients were co parable to those in a similar control group who had recei penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the aliment tract; however, the normal intestinal gram-negative bacte flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urtica skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of b weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six hou (Tablets Ilosone Chewable should be chewed or crushed swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromy therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as p of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examinat before receiving antibiotics, and monthly serologic tests sho be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 r (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to bas in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-c size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equival to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packag

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 19
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 19
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 196

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

UP TO 10-12 HOURS' CLEAR BREATHING ON ONE TABLET

Dimetapp® Extentabs®

(Dimetane® [brompheniramine maleate], 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.)

sinusitis, colds, or U.R.I., imetapp lets congested patients reathe easy again. Each Extentab rings welcome relief all day or all night, sually without drowsiness or over- imulation. Its key to success? The imetapp formula—Dimetane (brom- heniramine maleate), a potent anti- stamine reported in one study to have icited side effects as few as the placebo,* amed with decongestants phenyl- phrine and phenylpropanolamine— a dependable 10- to 12-hour form.

hiller, I. W., and Lowell, F. C.: New England Med. 261:478, 1959.

Contraindications: Patients hypersensitive to antihistamines. Not recommended for use during pregnancy.

Precautions: Until the patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.

Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability, or excitement may be encountered.

Dosage: 1 Extentab morning and evening, or as needed.

Supplied: Bottles of 100 and 500.

Also available: Dimetapp® Elixir for conventional *t.i.d.* or *q.i.d.* dosage. See package insert for further details.

A. H. ROBINS CO., INC.
RICHMOND, VIRGINIA 23220

A·H·ROBINS

Posed by professional model

I'm supposed to get up and do things?

With my heart?

It's entirely natural—and may even be desirable—for the cardiovascular patient to be somewhat anxious about himself.

But when anxiety leads to unreasonable self-imposed limitations and restrictions . . . when it aggravates cardiovascular symptoms . . . when it interferes with restful sleep, measures to help alleviate the anxiety are probably in order.

One measure, of course, is reassurance. Another, adjunctive measure, is EQUANIL (meprobamate).

Over a decade of experience has shown that EQUANIL (meprobamate) is generally well tolerated as well as effective. Side effects are usually limited to transient drowsiness; serious, therapy-interrupting side effects are rare.

Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

American Hospital Formulary Service Category No. 28:16.08

A quality controlled product of
Wyeth Laboratories Philadelphia, Pa.

to help relieve anxiety and tension occurring alone or secondary to organic disease

Equanil® (meprobamate)

Wyeth® SERVICE TO MEDICINE

Geigy

Tandearil®
oxyphenbutazone

helps osteoarthritic joints move again

3 out of 4 osteoarthritics completely or markedly improved

Sperling, I.L.: 3 Years' Experience with Oxyphenbutazone in the Treatment of Rheumatic Disorders, Applied Therapeutics 6:117, 1964.	76.9% of 407 patients
Watts, T.W., Jr.: Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73:65, 1966.	84.6% of 39 patients

Please see adjoining page for brief prescribing summary.

TA-4919 PC

Tandearil®
oxyphenbutazone

Therapeutic Effects: Tandearil is a nonhormonal compound which may rapidly resolve inflammation and help restore normal joint function. Its action does not affect pituitary-adrenal function or impair immune responses. Its value in osteoarthritis is especially noteworthy because this disorder responds inconsistently to steroids and is often resistant to salicylates. Further, indomethacin is limited only to osteoarthritis of the hip, whereas oxyphenbutazone is effective in all forms of the disease.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

For complete details, please refer to full prescribing information. 6562-VI(B)R

Availability: Tablets of 100 mg.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

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Each capsule contains:

Phenobarbital (¼ gr.) ..... 16.2 mg.
(Warning: may be habit forming)
Aspirin (2½ gr.) .....162.0 mg.
Phenacetin (3 gr.) .....194.0 mg.
Hyoscyamine sulfate.....0.031 mg.
Codeine phosphate.....¼ gr. (No. 2), ½ gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation and drowsiness have been reported.

A-H-ROBINS

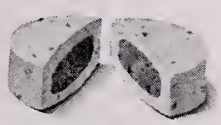
A. H. ROBINS CO., INC., Richmond, Va. 23220

To "catch" your patient's cold so others won't...

the speckled tablet with a core of difference

SUSTAINED-ACTION

Naldecon®



Each tablet contains:	Outer layer (immediate action)	Core (sustained action)
phenylpropanolamine HCl	20 mg	20 mg
phenylephrine HCl	5 mg	5 mg
phenyltoloxamine citrate	7.5 mg	7.5 mg
chlorpheniramine maleate	2.5 mg	2.5 mg

Each teaspoonful (5 ml) of syrup contains the equivalent of one-half tablet

For rapid and sustained symptomatic relief of colds and minor upper respiratory infections.

Prescribing Information: For complete information consult Official Package Circular. **Effectiveness:** Clinical experience has shown this formulation to be effective in relieving the symptoms of nasal congestion associated with pollen allergy or minor upper respiratory infections (common cold, nasopharyngitis, acute and chronic sinusitis). **Precautions:** Do not drive or operate machinery while taking Naldecon. Exceed dose or give to children under 6 years old only on advice of physician. **Contraindications:** Severe hypertension, hyperthyroidism, serious organic heart disease or severe diabetes mellitus. **Usual Dose:** Adults: One tablet morning, midafternoon and evening. Naldecon tablets are scored and may be broken for fractional dosage, without loss of sustained-action effect. **Supplied:** Bottles of 50 and 500 tablets. Syrup, 1 pt. bottle.

BRISTOL

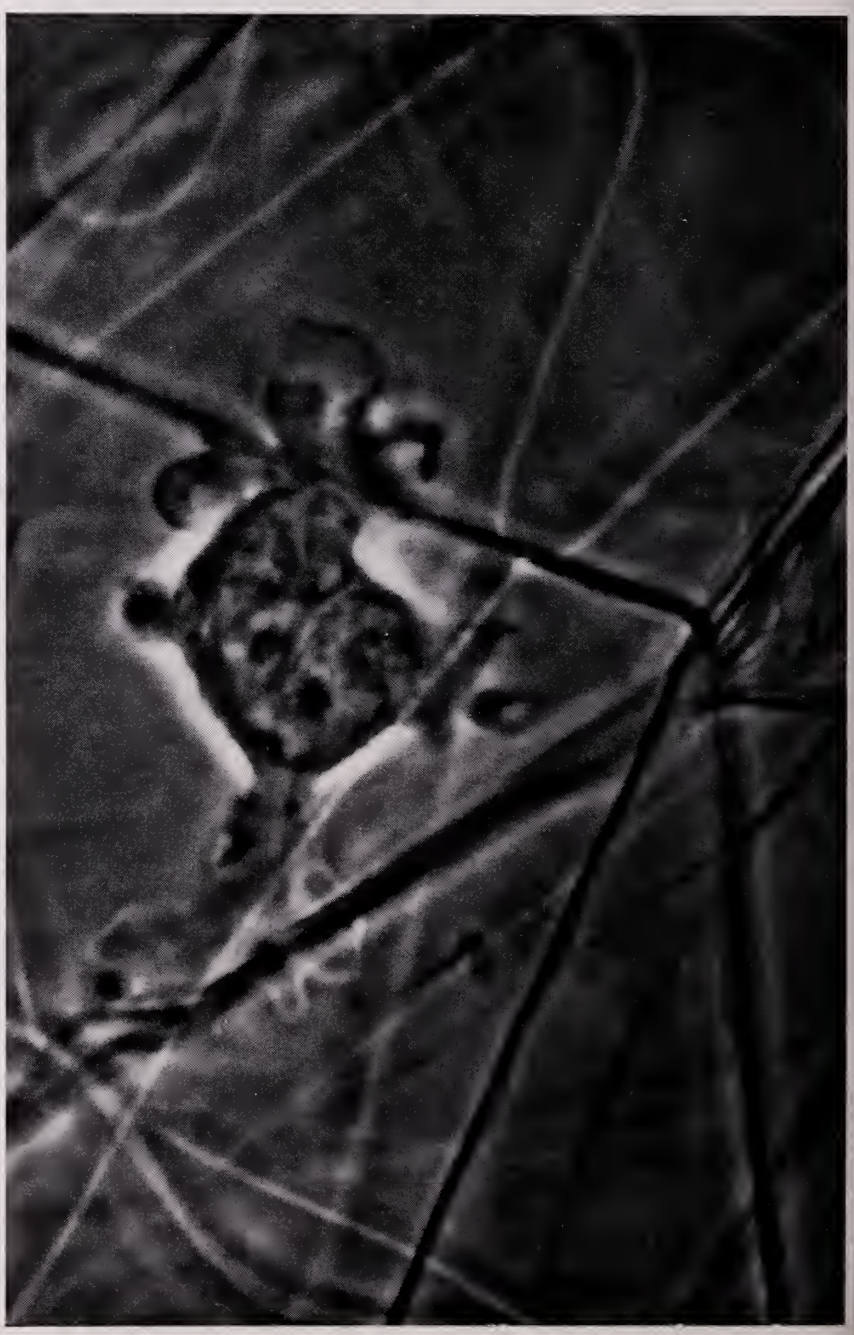
Bristol Laboratories
Division of Bristol-Myers Company
Syracuse, New York 13201

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

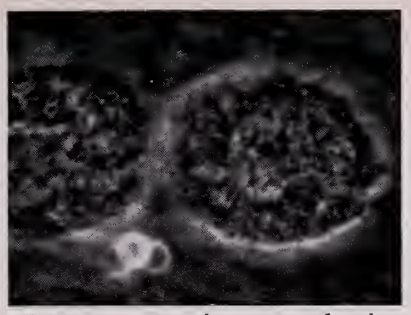


Visual evidence of how corticosteroids influence the inflammatory reaction

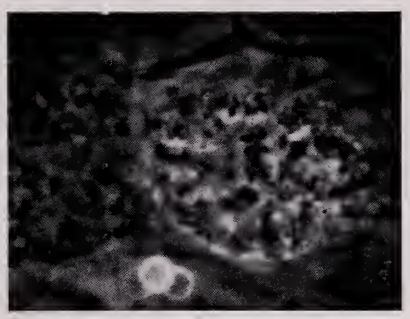
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



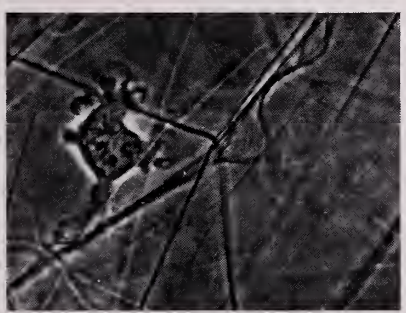
Phase-contrast microscopy showing mast cell before injury.



Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid – Synalar (fluocinolone acetonide) – the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.

Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.

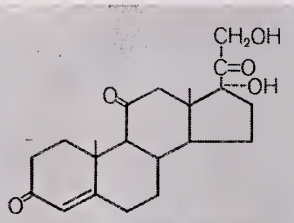
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

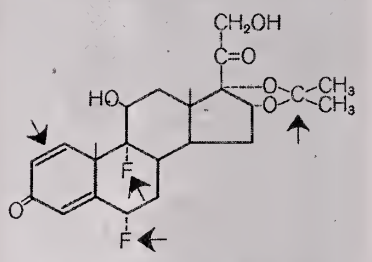
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

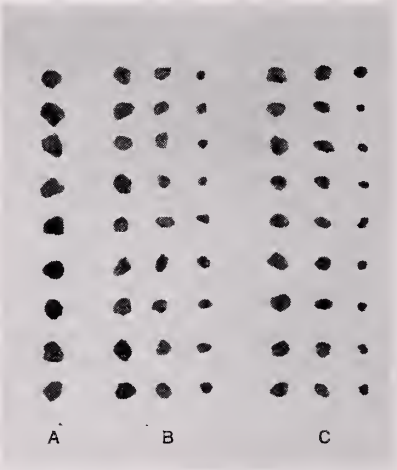


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.

THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolone acetonide — an original steroid from

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For inflammatory dermatoses... by any measure a topical corticosteroid of choice

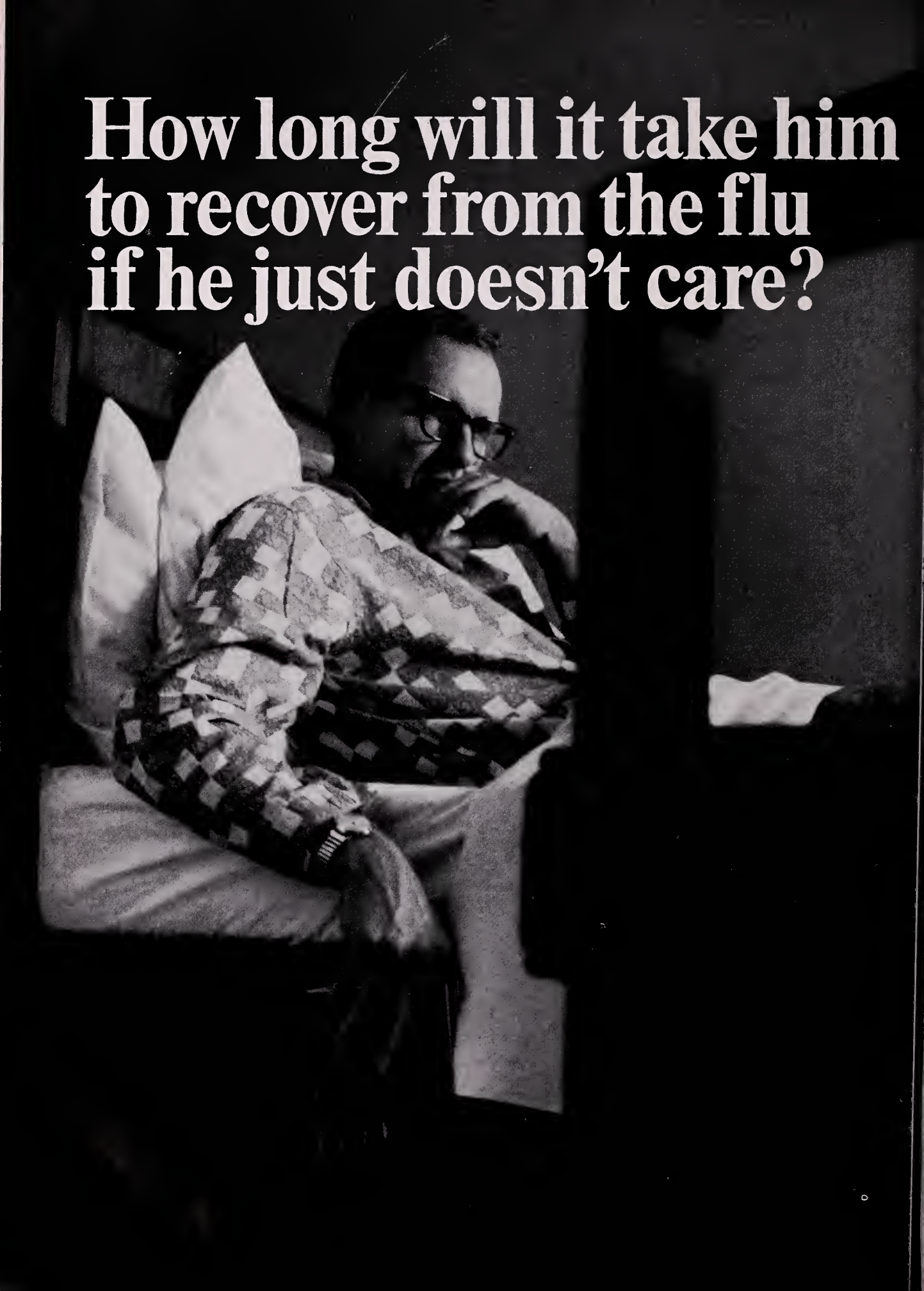
Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards

How long will it take him to recover from the flu if he just doesn't care?



Does he really care? Is he alert, encouraged, positive and optimistic about getting out of bed and back to work soon?

Or is he giving in to the depressing impact of confinement?

When functional fatigue complicates convalescence, Alertonic can help...

Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that so often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

Alertonic®

Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Merrell

THE WM. S. MERRELL COMPANY
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215

6-7907

New
low-cost tetracycline/antifungal therapy

for broad-spectrum activity
plus specific antifungal prophylaxis
at significant patient savings

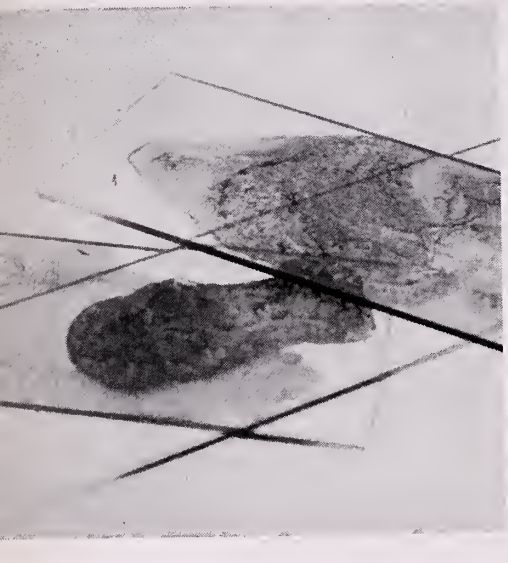
Whenever tetracycline is indicated in these candidates for Candida:

1. diabetic patients

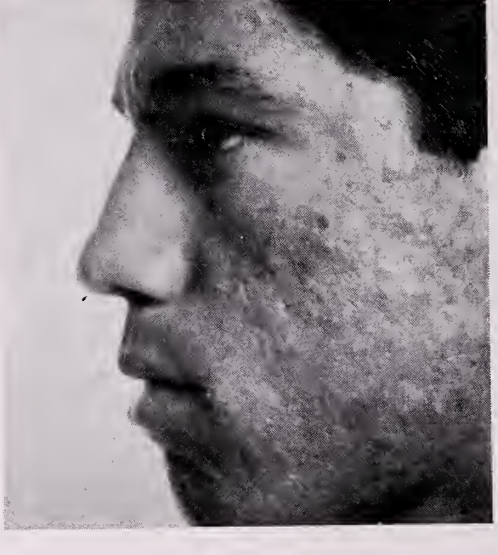
2. nonpregnant women with a history of recent or recurrent monilial vaginitis

3. elderly or debilitated patients

4. patients with a past history of moniliasis



5. patients on long-term tetracycline or corticosteroid therapy



PRESCRIBING INFORMATION. For complete infor
tion consult Official Package Circular. *Indications:*
fections of respiratory, gastrointestinal and genitourin
tracts and skin and soft tissues due to tetracycline-se
tive organisms, in patients with increased susceptibi
to monilial infections. *Contraindications:* The dru
contraindicated in patients hypersensitive to its com
nents. *Warnings:* Photodynamic reactions have been
duced by tetracyclines. Natural and artificial sunl
should be avoided during therapy. Stop treatment if
discomfort occurs. With renal impairment, systemic a
mulation and hepatotoxicity may occur. In this situat
lower doses should be used. Tooth staining and ens
hypoplasia may be induced during tooth developr
(last trimester of pregnancy, neonatal period and ch
hood.) *Precautions:* Bacterial superinfections may oc
Infants may develop increased intracranial pressure
bulging fontanels. In gonorrheal therapy, serologic
for syphilis should be conducted initially and mon
for 3 months. *Adverse Reactions:* Glossitis, stoms
nausea, diarrhea, flatulence, proctitis, vaginitis, derma
and allergic reactions may occur. *Usual Adult Dosag*
capsule q.i.d. Continue for 10 days in Beta-hemolytic s
tococcal infections. Administer one hour before or
hours after meals. *Supplied:* Capsules, bottles of 16
100. Each capsule contains tetracycline phosphate
plex equivalent to 250 mg. tetracycline HCl activity
250,000 units of nystatin. For Oral Suspension, 125
tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bo

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York

Tetrex-F®

Each capsule contains tetracycline phosphate complex equivalent to tetracycline hydrochloride 250 mg. and nystatin 250,000 u

Tetrex-F is priced lower
than most
tetracycline-antifungal products.

Look how many ways

Thorazine®

brand of

chlorpromazine

can help

	Tranquilizer	Potentiator	Antiemetic
Agitation	●		
Alcoholism	●		●
Anxiety	●		
Cancer patients	●	●	●
Severe neurodermatitis	●		
Drug addiction withdrawal symptoms	●		●
Emotional disturbances (moderate to severe)	●		
Nausea & vomiting	●		●
Neurological disorders	●		
Obstetrics	●	●	●
Pain	●	●	●
Pediatrics	●	●	●
Porphyria	●	●	
Psychiatric disorders	●		
Hiccups—refractory	●		
Senile agitation	●		
Surgery	●	●	●
Tetanus	●	●	

'Thorazine' is useful as a specific adjuvant in the above named conditions.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information in SK&F literature or *PDR*. *Contraindications:* Comatose states or the presence of large amounts of C.N.S. depressants. *Precautions:* Potentiation of C.N.S. depressants may occur (reduce dosage of C.N.S. depressants when used concomitantly). Antiemetic effect may mask other conditions. Possibility of drowsiness should be borne in mind for patients who drive cars, etc. In pregnancy, use only when necessary to the welfare of the patient. *Side Effects:* Occasionally transitory drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; mild fever; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosage (in rare instances, may persist); weight gain; miosis; lactation and moderate breast engorgement (in females on high dosages); and less frequently cholestatic jaundice. Side effects occurring rarely include: mydriasis; agranulocytosis; skin pigmentation, lenticular and corneal deposits (after prolonged substantial dosages).

For a comprehensive presentation of 'Thorazine' prescribing information and side effects reported with phenothiazine derivatives, please refer to SK&F literature or *PDR*.

Smith Kline & French Laboratories SK&F

TABLETS

Equagesic®

(meprobamate and ethoheptazine citrate with aspirin)

Wyeth®

Precautions: Keep out of reach of children. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. Give cautiously to patients with suicidal tendencies. Treat attempted suicide with immediate gastric lavage and appropriate supportive therapy

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness and CNS depression. Overdosage may result in salicylate intoxication. Meprobamate rarely causes allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioedema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

Weighing on his mind, too

When pain evokes anxiety and tension, thereby heightening patient discomfort, a simple analgesic may only touch on part of the problem.

This single-prescription, nonnarcotic product, however, usually provides effective analgesia *and* helps put the patient's mind at ease.

ECONOMICAL!
CORDRAN®
FLURANDRENOLONE
Half Strength
Lilly
cream and ointment
Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.
600811

Impressions of Viet Nam

On August 27, 1966, the C-47 on which I was riding banked sharply above the end of the runway to land. Wiping the condensation from the window, I saw military planes, helicopters and transports lining the long jet runways. The plane taxied to the hut of Air America. My companion on the flight, Dr. Gilbert Herrod, a surgeon on leave from DaNang, soon taught me the ropes in bumming a ride—anything with a motor running. We had arrived early in the morning. The city already was steaming with the heat and humidity of August, a heat which to the novice in Vietnam reeked of the impossible, especially to one from the desert where water is where it belongs—underground. As an American Volunteer Physician I was in my home for the next two months—DaNang!

The civilian hospital, a series of four closed buildings connected with verandas, was our destination. I later learned the verandas were as much a part of the hospital as the wards. At maximum, the hospital was designed for 200 patients, and now was carrying 750, plus the ever present "family." Actually, many of the casualties are dependent for survival on their relatives, despite the objections of many medical personnel. This meant two or three patients to each bed.

Dr. Wise, the American Medical Chief, met me and without any real formalities began showing me the hospital. We had taken approximately seventy-five steps when the indoctrination tour ceased. At this point lay a corridor of wounds for which I had no previous appreciation. War wounds I had seen, but never wounds packed with hair, grass, buffalo dung—all 18 to 36 hours old! Perhaps I might have been able to pass over this so often repeated scene, and no doubt would have, had I been in the hospital longer, but never before had I seen such poor, hungry people, so stupefied by tragedy. Clothed in black loose pajamas, squatting by stretchers filled with the injured, they fanned with conical straw hats to cool the fevered, and to shoo away the chronically insistent flies. I should have walked on, not stopping at the incessant pull at my arm, my hand, nor been halted by the quiet pleading of clasped hands held to the faces with the repetitious bow. Later I had to learn to walk by the quiet, but persuasive pleas of Bac Si', Bac Si'—Dou quaddou quadie." . . . ("it hurts"). But, I was new and dived into the seemingly endless carnage which lay around me.

The naive, almost Pavlovian conditioned fury with which the new American doctor plunges into the unsurmountable task of caring for the injured soon leads to the classic, though poorly described problem of Vietnamese working habits. He is shocked by absolute disbelief when "sleepytime" comes with the ringing of Buddah's gong. "You go sleepytime now, Bac Si'! Vietnamese sleepytime"—and the bile flows more rapidly and blood pressure ascends to new heights. And from somewhere in bygone college days, he recalls Kipling's admonitions:

> "Now it is not good for the Christian's health
> To hustle the Aryan Brown.
> For the Christian riles, and the Aryan smiles
> For he weareth the Christian down;
> And the end of the fight is a tombstone white
> With the name of the late deceased,
> And the epitaph drear—A fool lies here
> Who tried to hustle the East."

But he quickly forgets Kipling . . . and he picks up stretchers, opens up operating room cases, and does it all alone—for awhile. Then if he is smart, and can learn, he informs the newer American Bac Si' — "Vietnamese sleepytime now—stupid American."

There are many other new things to learn. First and foremost is to be supple—adapt, learn, and bend—because a specific problem may be handled surgically one way today, and completely differently tomorrow. The method depends on supply, time, and personnel—and how tired you are. The massiveness,

the extensive infarction of tissue, and the radicalness of debridement are the first lessons. The damage by a high velocity M-16 bullet, a little larger than 22-calibre, has to be learned. Pictures cannot do its destruction justice. Such a small missile can tear off an entire quadrant. Physicians who have been here any length of time, caring for the massive wounds, are the best teachers. They've learned the hard way!

One grows amazingly appreciative of what nature herself can do. In fact, the drear thought passes through the back of your mind —"I wonder if I haven't repeatedly been guilty of doing too much with patients at home?" Too often one finds that with the continuous delay of treatment of a patient, by demands of emergent new cases, his wounds have healed before one can either close or graft. This occurs also with fractures.

The strong policy of cooperation, and full association, with the Vietnamese causes problems. A drastic situation in the hospital resulted when the Vietnamese and American nurses started sharing the same dressing room. Vietnamese toilets are constructed to squat over; the shared dressing rooms had American fixtures. The American nurses objected, since the Co'es or Vietnamese women would squat on the seat with their feet—and occasionally miss a little. The Vietnamese hospital administrator agreed with his nurses that it was more sanitary to contact the seat with one's feet than one's seat, and suggested our nurses comply. I noticed the American nurses appeared more limber, but did not go barefoot. Cultural exchange can go many ways.

My letter sent last September, because of its immediate impressions, is presented to describe a daily routine:

"September 27th at 7 o'clock on Sunday, I began with the other doctors and nurses to care for 21 severely burned patients, burned the night before by napalm on a village. Charred, edematous, swollen faces covered with sand, debris—blistered, peeled skin which shredded in sheets and goddam flies, flies on the babies' mouths—babies lying near mothers, trying to suckle edematous breasts, swollen by burns. Hour after hour the care went on. I had other surgery to do, and finally went home. This A.M., Sister Francois, the Vietnamese nun, with her clods and soiled long white robe, was still shuffling through the now extremely swollen, though silent mounds which lay on mats that I know were yesterday the restless burned. Sister, so tired, yet so dedicated, her face lovely and warm, always laughing, no longer smiled— I sent her home. Jenny and Lil, two American nurses, no hours to stop, only intense care—so tired, yet willing to stay.

"Yesterday I operated a young girl shot through the abdomen, through the kidney, and out her back; did a Caesarean section on an unborn child with shrapnel in its skull. And so the day went.

"Yet, it would be ridiculous and dishonest of me to say this was all tragedy, because I saw as much beauty, grace, warmth and sheer robust humor as I've ever enjoyed. It must be true that it takes extreme opposites to make one really alive.

"Yesterday for some absolutely unexplainable reason I found the feet around me ridiculously captivating — so much so I began photographing them. I would be very far amiss to downgrade United States accomplishment in Viet Nam—*so much sacrifice by so few has bought time for us, who will appreciate it so little.* Much of what we have accomplished struck me in the nurses' feet, and I guess the reason for the 'feet kick.' The Vietnamese women are graceful, especially their feet, legs and hips. They move with a grace perhaps no other women possess. When I first came, our nurses were either barefoot in small flip-flops, or wooden high heels which exhibited their dainty and captivating feet. I looked at my surgical nurse, who is especially lovely—glanced at her feet, and in absolute horror saw she stood proud as a peacock in over-sized, ankle high white basketball shoes with soles one inch thick. Her slim, graceful ankles now appeared as those of a skinny 6-year-old. Somehow this reeked of the Western effort in the East.

"Kids here have a large slit in their seats, or no bottoms at all. This is very convenient, as the Sister only has to hang the kid in mid-air and/or splash him in a puddle. We want them to wear clothes and go to the toilets. This is as usual hard to appreciate until one walks down the wards of typhoid fever, sees babies infested with worms appearing starved, and see emaciated, tiny skeletons die of dysentery. Such is the problem in Viet Nam—ridiculous, tragic, inhumane, yet full of good intent—kindness, warmth, and Americanism beyond any expectation, yet reeking of absolute schizophrenia.

"DaNang—a port city, filled with neither the gracious traditions of South Viet Nam nor the industry of the North Vietnamese, yet lying on a harbor difficult to equal anywhere in America, and along glorious beaches, unequalled by any of Florida—and a jungle-covered back-drop of mountains, verdantly green of day, purple and blue at evening, and covered with flares, V.C. and mortar fire at night. DaNang filled with thousands of refugees who will build a tin shack from any discards able to be found, who set up thousands

of shops to sell C-rations, American cigarettes, pop, and stolen furniture side by side with industriously produced fine pieces as vases from shell casings, ivory or marble cuttings. DaNang, where sewers are open and if it doesn't rain, your nose tells you it should. DaNang, where cowardice and dishonor parade unrecognizable except by close scrutiny. This is where I spent two months."

It will take a long time to understand what occurred, or even recognize it, yet one shortly becomes aware of what you, yourself are—some good—some bad. Nevertheless, all is raw and brutally awakening. Were we only able, as Whitman, to "See a new city filled with robust love." Perhaps, unlike Whitman, we realize for the world this robust love comes only at an unfathomable price. I'm not sure we will be either able or willing to pay. Scientific medicine? Educational surgery? No. Yet, here was an experience where one appreciates being a doctor with the zeal of a third-year medical student his first day on a ward.

John W. Batdorf, M.D.
Las Vegas, Nevada

President's Greeting

With the publication of this second special Nevada Edition of the *Rocky Mountain Medical Journal*, the Nevada State Medical Association brings greetings to all our colleagues and readers in the Rocky Mountain area. We are proud of our doctors who have contributed to this issue, and we sincerely hope that each reader will find something interesting, stimulating, and educational in these articles.

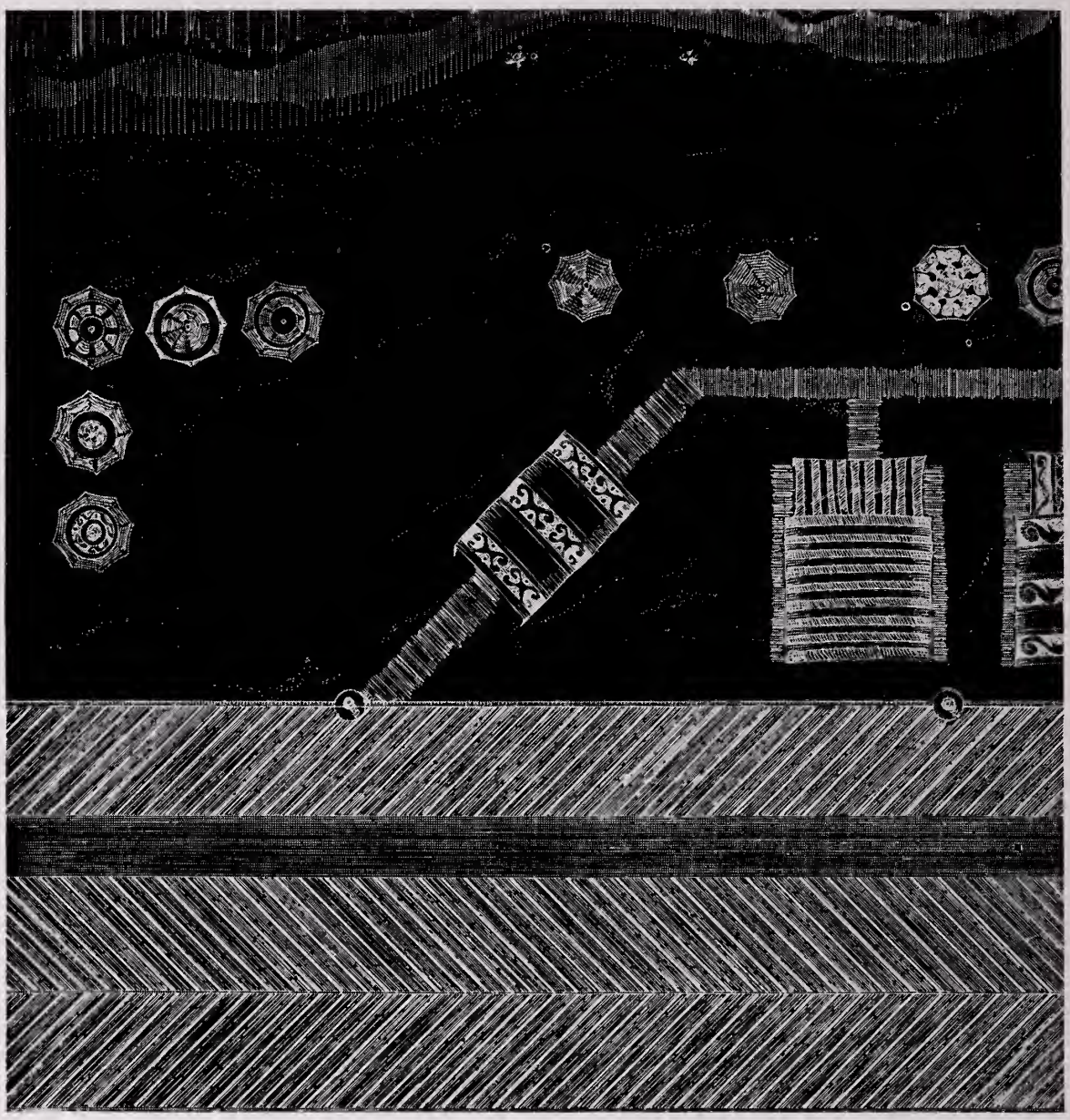
During the past year the Nevada State Medical Association has grown rapidly, not only in numbers, but in program and activities under the able leadership of our immediate past president, Joseph M. George, Jr., M.D. Medicare came in relatively smoothly in Nevada, and as yet, no major problems have developed. Preliminary organization of Nevada Blue Shield has been carried out and has been approved by the National Association of Blue Shield Programs. The program will be put into action during this coming year. The highlight of the year was the hosting of the 1966 AMA Clinical Session by the Clark County Medical Society in Las Vegas. The meeting set a record for the highest total registered attendance, and the Nevada State Medical Association is proud of its members who made the meeting a success.

During 1967, committees of the Nevada State Medical Association will be working diligently on many projects. We are working closely with the State Director of Health and Welfare and with the State Legislature in the implementation of Title XIX. Active participation and study regarding Title IX (Heart Disease-Cancer-Stroke Regional programs) is being carried out primarily through the Western Interstate Commission for Higher Education (WICHE). Closely related is continuing study regarding hope of establishing a medical school in Nevada in the not-too-distant future. Continual negotiations are being carried out with the Department of Defense regarding the unique position of the NSMA as fiscal intermediary for the ODMC program and its broadening program for retired personnel and uniformed personnel and their dependents.

The Nevada Medical Political Action Committee has been active and effective and we are interested to see the response of our membership to the newly established program of direct billing of AMPAC-NEMPAC voluntary dues included with our county, state, AMA, and AMA-ERF statements this year. The above are, of course, only a few of the activities confronting organized medicine in Nevada, the most rapidly growing state in the Union.

Finally, we wish to cordially invite every physician from the Rocky Mountain States to attend our Annual Meeting at Lake Tahoe, November 7-11, 1967. We hope to offer stimulating scientific sessions in one of the world's most beautiful scenic settings, with the well known attractions of Nevada entertainment and hospitality close at hand.

William M. Tappan, M.D., President
Nevada State Medical Association



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Roentgenographic manifestations of appendiceal disease

Leon H. Steinberg, MD, John I. Pretto, MD, and Murton D. Strimling, MD, Las Vegas, Nevada

Experiences with a modern diagnostic tool in pursuit of an old enemy.

APPENDICEAL DISEASE may simulate practically every common and some uncommon intra-abdominal diseases. Bockus[2] states "acute appendicitis is concerned in the differential diagnosis of all abdominal conditions capable of irritating the peritoneum and of all medical diseases which simulate the so-called acute abdomen." The purpose of this paper is to describe and illustrate some of these diseases, to show the value of routine roentgenographic studies of the abdomen in appendiceal disease, and to demonstrate the use of barium enema examination for evaluation of the cecum and appendix.

Our routine abdominal series consists of AP recumbent and upright films of the abdomen, including a PA film of the chest, and it has become a common practice for the physicians on our staff to order such a series in most cases of suspected intra-abdominal disease. The results of use of this series of films has been valuable and many unsuspected cases of appendiceal disease have been uncovered. The PA film of the chest is for discovery of pulmonary diseases simulating abdominal conditions and for better appreciation of free air under the diaphragm. Not all cases of appendiceal disease will show changes on the plain films of the abdomen, but it is estimated that at least 50 per cent will.[6] In cases where there are no or questionable changes, we do not hesitate to do a barium enema examination to evaluate the cecum and appendix.

Fecaliths of the appendix

CASE 1. A 5-year-old male was admitted with a 36-hour history of right lower quadrant pain, vomiting and constipation. On admission his white count was 16,800 and clinical diagnosis of acute appendicitis made. The patient was operated through a McBurney incision and a ruptured, inflamed, friable appendix was removed, and a drain inserted. The next morning acute abdominal distention occurred, and a portable film of the abdomen (Fig. 1) taken. The film was interpreted to show a fecalith of the appendix to the right of the L-4 vertebral body and evidence of a small bowel obstruction. The patient was reoperated with removal of the fecalith and decompression of the small bowel. Subsequent recovery was without significant complication.

This patient's appendix ruptured due to the presence of a fairly large fecalith which was missed by the surgeon at the time of the appendectomy and, therefore, not removed. As a result of the presence of the fecalith within the abdomen, abscess formation occurred about the fecalith which trapped a loop of ileum within the inflammatory mass causing small bowel obstruction.

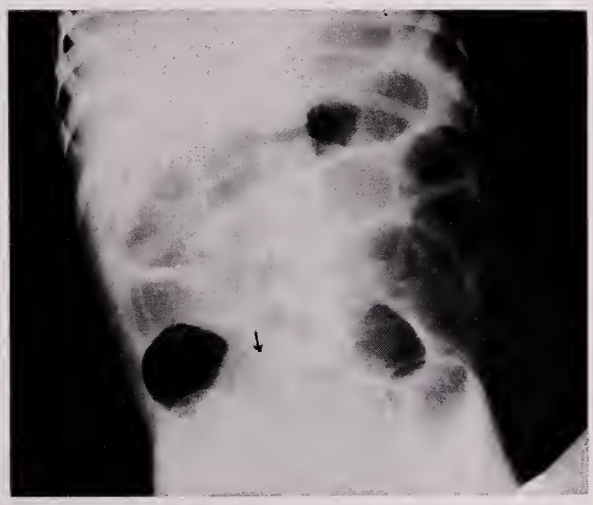

Fig. 1. Concentrically calcified fecalith to the right of L-4 with an associated small bowel pattern of obstruction. (Case 1.)

There were no films of the abdomen taken prior to the initial appendectomy, and conceivably the second surgery and the small bowel obstruction might have been averted if the surgeon had been aware that there was a fairly large calcified fecalith present.

CASE 2. A 15-year-old healthy male developed acute abdominal pain four days prior to admission. The progressive and persistent nature of the pain led to admission. Physical examination showed slight tenderness in the right lower quadrant. WBC was 13,500, temperature 102°. Admitting diagnosis was acute appendicitis. Abdominal series (Fig. 2) revealed a calcified fecalith of the appendix on the right side of the pelvis with evidence of air-fluid formations in the large and small bowel suggestive of peritonitis. Laparotomy confirmed this diagnosis showing a perforated appendix which was acutely inflamed and contained three fecaliths. One fecalith was calcified and two smaller ones were not. Following an uneventful postoperative course the patient was discharged five days after admission.

The series of abdominal films taken of this patient clearly showed the presence of the fecalith and alerted the surgeon to search for the fecalith even if not found in the region of the appendix.

CASE 3. A 39-year-old male was admitted to the hospital for a workup to rule out possibility of duodenal ulcer. On routine preliminary film of the abdomen, taken prior to the upper G.I. examination, there were noted four calcifications to the right of the mid-lumbar region which were lined up in a manner simulating calculi within the right ureter (Fig. 3). An intravenous pyelogram examination was done the following day showing these calcifications to be outside the course of the right ureter (Fig. 4) and on subsequent barium enema examination these calcifications were proven to be fecaliths within the appendix. No other abnormality of the G.I. tract was found during the admission and the patient was discharged without operation.

This case illustrates fecaliths of the appendix simulating ureteral calculi. The presence of fecaliths within the appendix in a patient with acute abdominal symptoms almost always means appendicitis and there is an extremely high probability that the appendix is gangrenous.[1] The patient discussed above was asymptomatic with respect to his appendix, but most authors recommend interval appendectomy in relatively asymptomatic patients.[3]

Fig. 2. Calcified fecalith in right pelvic area, with air-fluid levels of distal small bowel indicating perintonitis. (Case 2.)

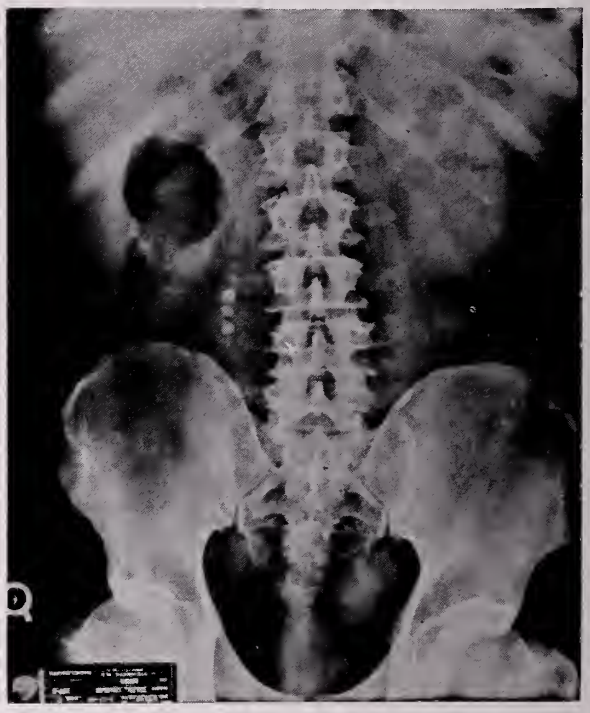

Fig. 3. Four calcified fecaliths of the appendix, in the course of the right ureter. (Case 3.)

Appendiceal disease simulating diffuse peritonitis

CASE 4. A previously healthy woman of 25 years was admitted to the hospital in the evening following sudden onset of malaise, cramping abdominal pain followed by diarrhea, approximately 8 hours previously. On admission, temperature was 99°, pulse 100, and respiration quiet. Admit-

ting diagnosis was acute gastroenteritis. The following morning her temperature rose to 104°, and WBC was 28,500 with shift to the left. The patient was definitely in more distress with abdoimnal guarding and right lower quadrant tenderness. Findings of abdominal x-ray series (Fig. 5) were those of a diffuse peritonitis, there being a few small gas bubbles demonstrable in the right lower quadrant of the abdomen and attenuation of the right properitoneal fat line. Possibility of ruptured appendix with diffuse peritonitis was entertained by the radiologists. Laparotomy was performed, confirming perforated appendicitis with generalized peritonitis. Postoperative course was uneventful, and the patient was discharged eight days after admission.

This case illustrates clearly the usefulness of the abdominal series. The patient was admitted with a diagnosis of gastroenteritis and without radiographic study it is conceivable that the arrival at the correct diagnosis could have been delayed, increasing likelihood of severe complications.

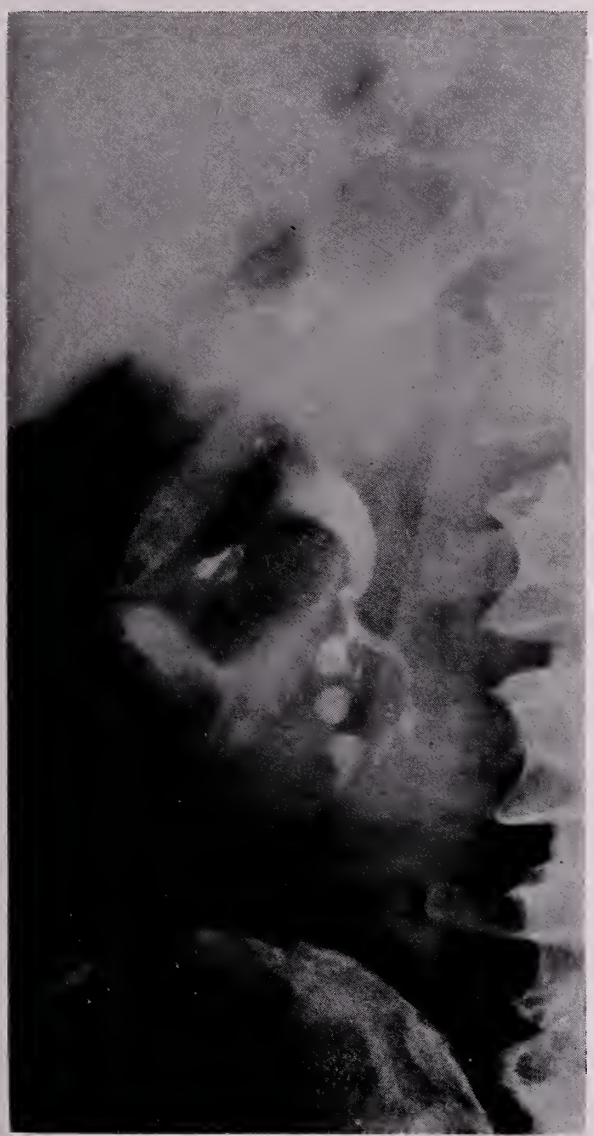

Fig. 4. Film of the abdomen showing relationship of the fecaliths to the right ureter. (Case 3.)

Fig. 5. Film of the abdomen interpreted to show diffuse peritonitis due to a ruptured appendix. (Case 4.)

Appendiceal disease simulating acute cholecystitis

CASE 5. A healthy 28-year-old male was admitted with a three-day history of abdominal pain which grew progressively worse 12 hours prior to admission. There was no previous history of predisposing conditions. On physical examination there was right upper quadrant tenderness and guarding with a questionable mass below the costal margin. Admission temperature was 100°, WBC was 22,200, urinalysis was negative. Admission diagnosis was acute cholecystitis. An oral cholecystogram study was ordered which showed the gallbladder to be normal (Fig. 6). Intravenous pyelogram and barium enema examinations were then ordered and during filming of the intravenous pyelogram there was noted a number of unusual air bubbles underneath the right liver margin (Fig. 7). The barium enema examination (Fig. 8) showed a retrocecal appendix with the tip of the appendix reaching high in the right upper quadrant adjacent to the abnormal air collection, which was interpreted as appendiceal abscess. An appendectomy was performed and the diagnosis was confirmed pathologically. The patient was discharged after an uneventful recovery.

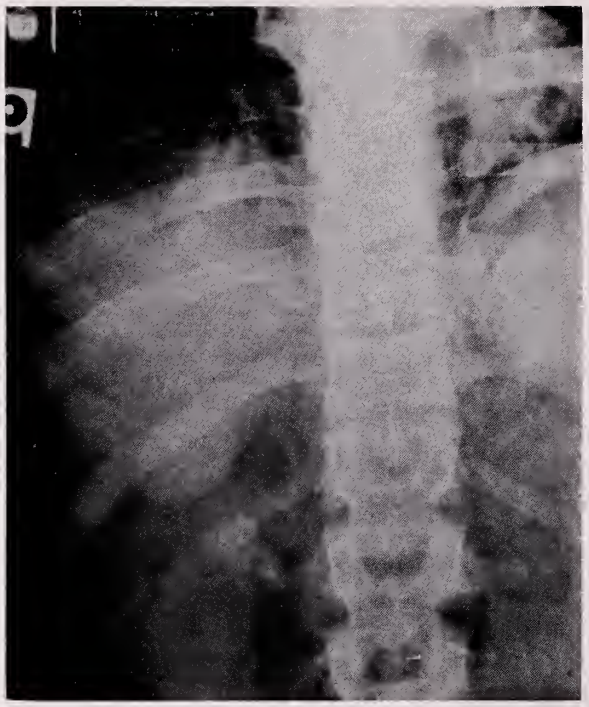

Fig. 6. Normal oral cholecystogram. Air bubble below the gallbladder interpreted to localize ruptured appendix. (Case 5.)

The physician referring this patient was greatly surprised at the normal oral cholecystographic findings. The correct diagnosis of subhepatic appendiceal abscess, secondary to a ruptured retrocecal appendix was correctly arrived at by barium enema examination. This example illustrates use of barium enema in acute appendiceal disease.

Appendiceal disease simulating carcinoma of the ascending colon

CASE 6. A 31-year-old male had an episode of abdominal pain, fever and vomiting approximately 4 weeks prior to admission. The symptoms were present more or less for a period of about 12 days with a complete remission for about 3 weeks. A recurrence of abdominal pain in the right lower quadrant led to a barium enema examination. The barium enema (Fig. 9) was interpreted as a carcinoma of the ascending colon. At laparotomy there was a large mass encountered adherent to the kidney and encircling the ascending colon. The surgeon considered the mass to be a carcinoma and right hemicolectomy performed. The pathologist report was periappendiceal and pericolic abscess following rupture of a mucocele within a retrocecal appendix.

This is a very unusual manifestation of appendiceal disease. Even in retrospect it is difficult to arrive at the correct diagnosis.

Fig. 7. Close-up film of I.V. pyelogram showing gas bubbles underneath right liver margin, interpreted to indicate appendiceal abscess. (Case 5.)

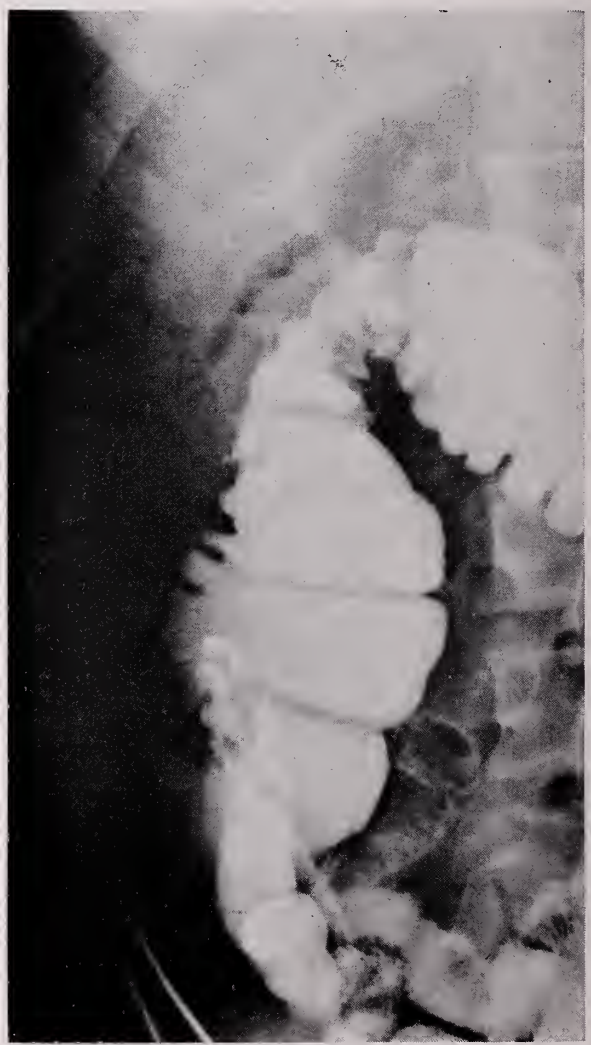

Fig. 8. Barium enema indicating retrocecal appendix with air in an appendiceal abscess, above hepatic flexure. (Case 5.)

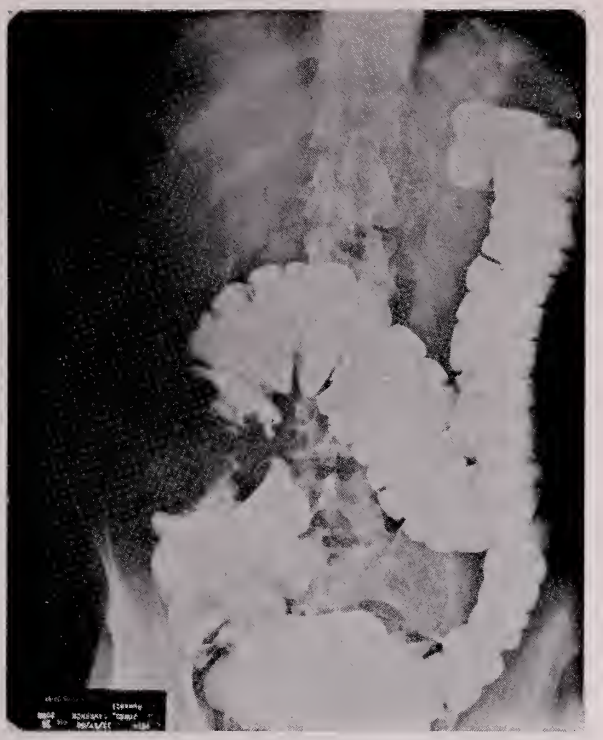

Fig. 9. "Applecore" lesion of ascending colon simulating carcinoma but due to appendiceal abscess. (Case 6.)

Fig. 10. Extravasation of barium from cecum into area interpreted to be appendiceal abscess. (Case 7.)

Fig. 11. Close-up films of barium filling the proximal appendix and demonstrating the actual perforation. (Case 7.)

Barium enema examination in perforated appendix

CASE 7. A 64-year-old male cardiac patient had been admitted previously for a coronary infarction. He was released, was followed, and was well until 6 weeks prior to this admission. At that time he developed sudden abdominal distress with nausea and vomiting. Following this episode he was seen as an out-patient for a barium enema examination which showed (Figs. 10 and 11) a ruptured appendix with barium clearly seen outlining a portion of the appendix and entering a large abscess cavity in the lower right abdomen. The patient was placed on antibiotic therapy and an interval appendectomy performed. The pathological report was a ruptured vermiform appendix with periappendiceal abscess, old.

There has been much discussion as to the use of barium enema examination in acute appendicitis and especially during the presence of a ruptured appendix. It is our experience, and this is verified by some recent literature, that there is no contra-indication to the use of barium enema examination during acute appendicitis or suspected rupture.[8] The barium itself is an inert substance and does not cause serious complications. The primary cause of the complications occurring in appendiceal disease is rupture with secondary spillage of bacteria laden colonic contents.

Free intraperitoneal air due to ruptured appendix

CASE 8. A 36-year-old male was admitted following a short episode of diffuse abdominal pain and fever. An abdominal series including a PA film of the chest showed the presence of a large amount of free air (Fig. 12) underneath both domes of the diaphragm, especially on the right. Films of the abdomen showed no evidence of diffuse peritonitis. Diagnosis of a ruptured viscus was entertained, and at laparotomy a perforated appendix with pneumoperitoneum and diffuse peritonitis found.

The presence of a fairly large amount of air within the abdominal cavity is a most unusual finding secondary to perforated appendix. There have been very few reported cases in the English literature[5, 7, 8]. We have seen another case (not illustrated here) of a very small bubble of gas underneath the dome of the right hemi-diaphragm which was also due to a ruptured appendix.

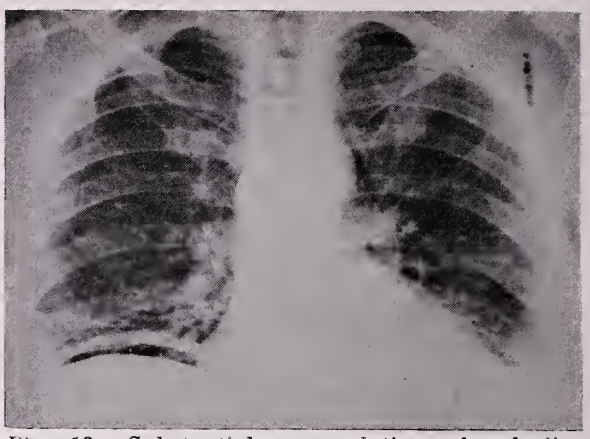

Fig. 12. Substantial accumulation of sub-diaphragmatic air secondary to perforated viscus which proved to be ruptured appendicitis. (Case 8.)

Discussion

The above cases clearly show the value of routine roentgenographic studies as well as the use of barium enema examination in appendiceal disease. We do not advocate the routine use of an abdominal x-ray series or barium enema in all cases of suspected appendiceal disease, but we strongly advise that a routine abdominal x-ray series be done in any suspected case of appendicitis where there is slightest doubt as to the diagnosis.[4] In our experience, localizing right lower quadrant roentgen signs are present in many cases of uncomplicated appendiceal disease and it has been estimated that 60 to 70 per cent of such cases have positive x-ray findings. With rupture of the appendix, the incidence of positive x-ray findings rises to at least 90 per cent.[9]

Over the course of the years we have done many barium enema examinations in patients with suspected appendiceal disease who had negative or questionable findings on the routine abdominal series. We feel that visualizing the appendix by barium enema in its entirety constitutes proof of a normal appendix, and a significant number of patients have been saved an appendectomy because of the visualization of the entire appendix on the barium enema. Thus far we have never been proven wrong in the above assumption, but we would like to stress that the radiologist must be sure the appendix is visualized in its entirety before notifying the referring physician of a normal appendix.

Increased use of routine abdominal roentgenographic studies and barium enema examinations in suspected cases of appendiceal disease should decrease the number of normal appendices removed and will aid the surgeon by advising him of possible complications prior to the surgery.

Summary

A number of cases of appendiceal disease with unusual roentgenographic findings are presented and discussed. We advocate increased use of routine roentgenographic abdominal studies and barium enema examinations in cases where the diagnosis of appendiceal disease is uncertain. •

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Smog - - Its Origin

It may not all be man-made

George T. Smith, MD, Reno, Nevada*

Another hypothesis on the origin of smog— and the etiology of seasonal asthma.

LITERATURE concerning investigation of smog leads us to suspect that not only man-made products such as gasoline vapors and exhaust gases from engines bring about air pollution but also volatile materials produced by vegetation. Professor Frits W. Went has calculated that approximately one billion tons of volatile organic substances (terpenes) are released per year by vegetation over the surface of the earth.[1] Terpenes are low molecular weight hydrocarbons. The problem of disposal is one of concern, particularly if they should prove toxic.

It has been established that throughout the world at any one time there are measurable quantities of organic substances (terpenes) in the air at concentrations from 2 to 20 parts per billion. The terpenes are liberated from plants during growth and decomposition. These substances are produced inside plant cells. Crushing, drying or heating releases these volatiles in large quantities. Thus, any plant produces an odor when crushed between the fingers. There is some evidence to show that the dissipation of terpenes passes through the same cycle as that of gasoline vapors in cities, i.e., they are photochemically altered by sunlight. This results in the formation of peroxides, ozonides, or free radicals which lead to the production of Aitken-sized condensation nuclei. These small particles (less than 0.1 microns) coagulate and produce more stable, larger particles. These particles in turn produce a pollution haze commonly referred to as the summer or "heat haze" which hangs over all of the vegetated earth. One of the most obvious effects of the terpene particles is a blue haze formation seen particularly in certain mountainous and desert regions in the United States.[2] These blue hazes are responsible for the blueness in the air. The Blue Ridge Mountains of Virginia are blue primarily because of these hydrocarbons. Dr. Went, in cooperation with the atmospheric physics group at the Desert Research Institute, University of Nevada, at the present time is measuring the condensation nuclei in the atmosphere. The condensation nuclei containing terpenes are by-products returned to earth in the form of rain and snow. Analysis of solid matter of rain and snow reveal that up to 50 per cent is organic in nature, and even snow from the snow-caps of Greenland contains up to 5 per cent organic matter.

These organic compounds may have a specific significance in the future development of smog control, particularly if they prove to be natural air pollutants. Most research efforts to date have been directed toward reduction in the admission of man-made pollutants. The relationship between organic volatile substances (terpenes) liberated by plants and their effect on man must be studied to determine if they are toxic.

There are three medical observations which suggest that terpenes may, indeed, be toxic. The first relates to the human with asthma, chronic bronchitis and emphysema. For years, patients with these diseases have been sent to the warmer desert climates of Arizona, Nevada and New Mexico. Nevada hospital statistics reveal that this disease is prevalent among the native population living

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here. During 1964 and 1965 patients admitted to Washoe Medical Center, Reno, Nevada, completed questionnaires pertaining to the vegetation in their surroundings 24 hours prior to their attacks. In the Reno area there was a close correlation between the occurrence of asthmatic attacks and the concentration of terpenes in the atmosphere as determined by monitoring with a gas chromatograph. Further studies are in progress which will show whether this is merely a casual relationship. It is known, however, that asthmatic attacks are often seasonal. Curry[3] and Booth, et al.[4] have shown that asthmatic patient admissions in different hospitals throughout the United States have similar seasonal curves. These groups attempt to relate their admissions to pollinating seasons. However, this is also the time of highest terpene production. These two groups have shown a uniform increase in asthmatic emergency visits during the fall. Various explanations had been suggested, but they are unable to find any single consistent responsible factor.

Secondly, the development of congenital abnormalities in chick embryos following exposure to paint and gasoline fumes are known to occur and have been reported by embryologists. Paints have terpenes as their base. It is also well recognized that painters and others exposed to high vapor concentrations of turpentine and paint products may develop pulmonary symptomatology.

Thirdly, acute bovine emphysema of cattle occurs in the western United States in the fall of the year and has been known to result in the death of up to 20 per cent of certain herds.[5] This disease is quite different from "Brisket Disease" of high altitudes. It occurs when cattle which range on high, dry foliage during the summer are brought to the lush pastures in the valley during the fall. It invariably affects adult cattle three to ten days after this change of feeding. This lush vegetation presumably produces large quantities of terpenes.[6] This fall, Dr. Went and Dr. Donald Olsen of our laboratory measured terpene contents from the grasses on a pasture in Carson Valley, where twelve cattle died with acute bovine emphysema. The amount of terpenes recorded from the grasses and in the air at that time were higher than those found in the wooded forests of Little Valley during the entire summer. Etiology of acute bovine emphysema remains undetermined, and exhaustive studies of possible toxicity of grasses, viruses, bacteriologic and histamine-like agents have been unrewarding. Doughtry[7] has suggested that it is associated with rumen gas. His experiments prove that nearly 60 per cent of gases eructated from

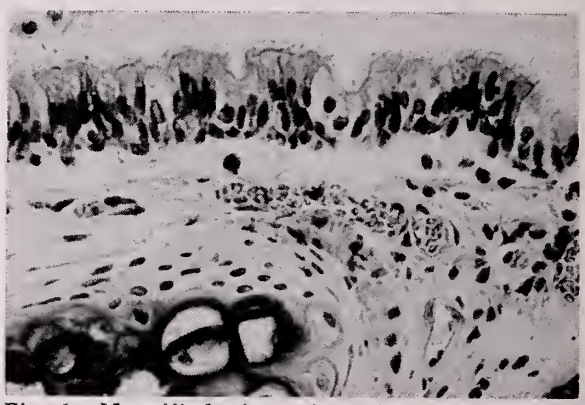

Fig. 1. Magnified view of tracheal mucosa in a normal rat. Note the tall columnar epithelial cells with cilia present. (x750)

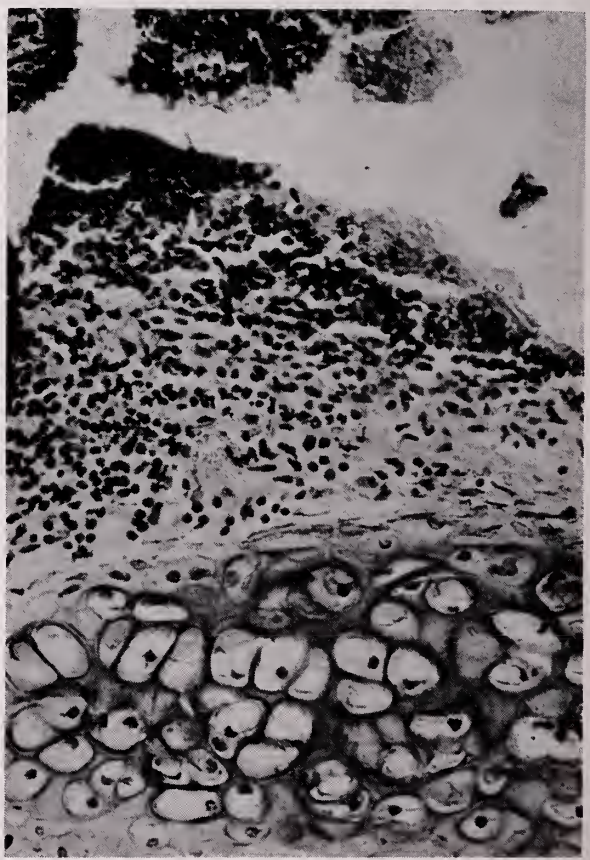

Fig. 1A. Loss of tracheal mucosa with superimposed infection in a rat three days after second exposure to terpenes. (x750)

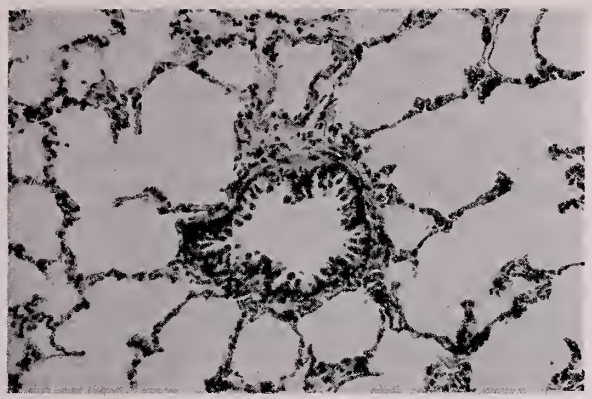

Fig. 2. Bronchiole in a normal rat lung. Note the epithelial lining is intact and surrounding airways are widely open. (x480)

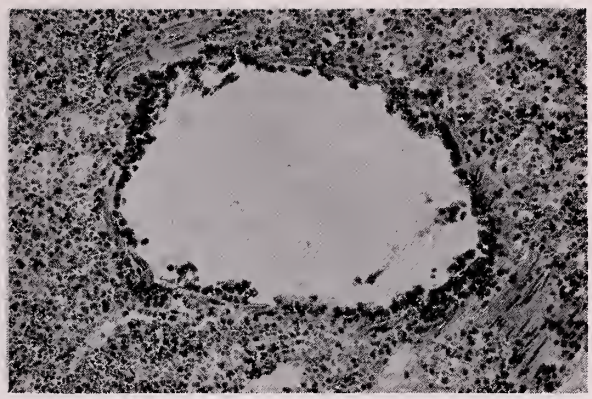

Fig. 2A. Bronchiole from a rat lung three days after exposure to terpenes. Note the sloughing of the epithelial lining and the marked congestion present in the lung. (x750)

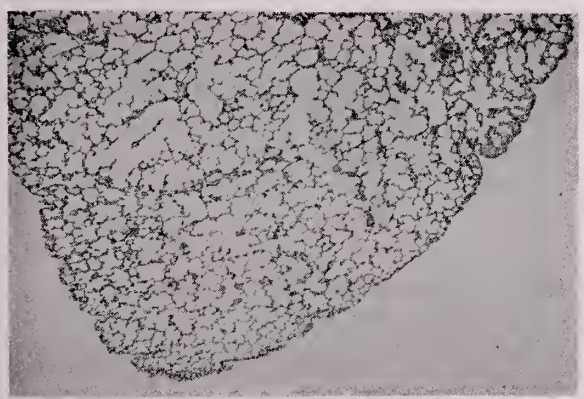

Fig. 3. Low power photograph of a normal rat lung. Note patent airways. (x75)

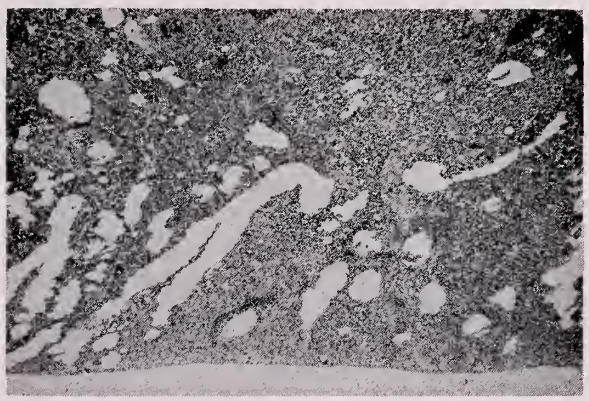

Fig. 3A. Low power photograph of lung of rat which died following acute exposure to terpene particles. Congestion is severe and the large, dilated airways are present, representing the acute production of emphysema. (x75)

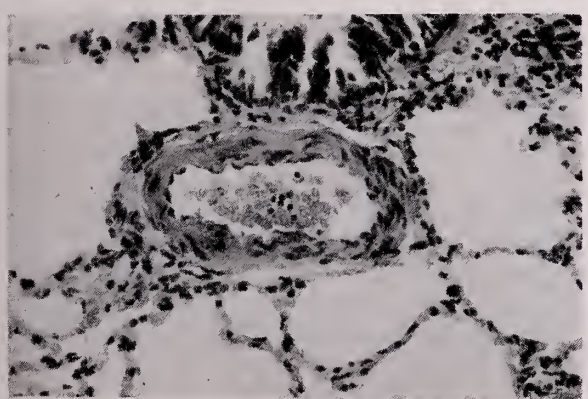

Fig. 4. Medium power magnification of normal rat small muscular arteriole. Note endothelial lining, smooth muscle cells and lumen wall ratio. (x750)

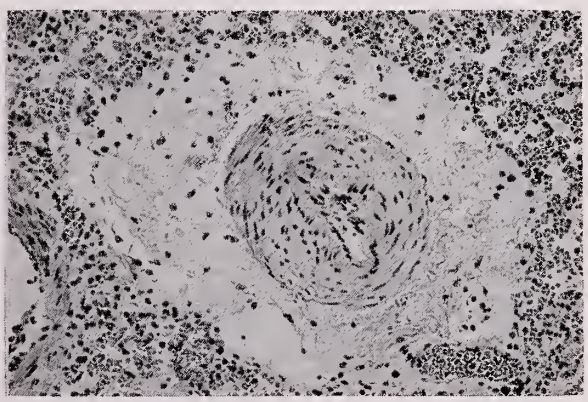

Fig. 4A. Muscular artery which is focally thickened following a second exposure to terpene particles. (x750)

the rumen are inhaled into the lungs before expulsion. The content of terpenes in the rumen of cattle expiring in Carson Valley were measured and found to be approximately 40 per cent of the rumen, the largest portion of remaining gas being methane. It is well recognized that methane and certain terpene vapors are indeed toxic to the oropharyngeal and pulmonary mucosa.

Can one correlate human asthma, bovine emphysema and the toxicology of the developing embryo? Is there a common denominator? It is possible that terpenes represent this unknown factor. An important question is whether or not there is a toxic effect from these volatile plant materials on animal and human life. We now know that certain plants which are high quantity terpene producers, such as tobacco plants, can and do inhibit the growth of surrounding plants.[8] It is also a recognized medical fact that turpentine, a petroleum product containing large amounts of terpene (particularly alpha pinene) are toxic when ingested.

In order to begin this investigative study, laboratory animals were subjected to various concentrations of terpenes in an attempt to determine if terpenes at normal atmospheric concentrations are harmful. The lung was studied in detail, using postmortem methods (Figs. 1 to 4), to see whether toxic manifestations were due to vascular or to bronchial lesions and to see if these lesions were sufficient to cause cor pulmonale. Twenty-five laboratory white rats (Rattus norvegicus), 250 to 350 grams in weight, fifteen kangaroo rats (Dipodomys merriami), 30 to 50 grams in weight, and ten adult guinea pigs, 400 to 800 grams in weight, were subjected to approximately 40 to 60 parts of alpha pinene per million parts of air in a chamber through which the air flow rate was 6 to 8 meters per minute. The white rats subjected to this concentration became lethargic within ten minutes and within fifteen minutes became severely agitated. After twenty minutes they developed purposeless movements and began staggering and lost their equilibrium. Within twenty-five minutes convulsions ensued, and death occurred within thirty minutes. At autopsy, the rats had focal loss of tracheal mucosa, pulmonary edema, and cerebral edema. If the rats were removed from the alpha pinene within twenty-five minutes from the beginning of the experiment and placed in either oxygen or open air, they recovered. Twenty-four hours later, however, the trachea and large bronchi had focal areas denuded of mucosal epithelium. Within and surrounding these areas were acute inflammatory cells associated with destructive changes in the basement membrane and submucosal glands. If the animals were placed in the chamber for a second and third time, death occurred earlier. The adult guinea pig, weighing more than the white rat, had similar symptoms; however, death did not occur on the first exposure before 35 to 45 minutes. The kangaroo rat, weighing less than the laboratory rats, died after the first 20 minutes when exposed to the alpha pinene in the same concentrations. Laboratory personnel working in enclosed laboratory space, observing the symptoms of the laboratory animals, developed conjunctivitis and inflamed oropharyngeal mucosa which required medical therapy.

The results of this pilot study clearly showed that alpha-pinene is toxic in high concentrations to both human and laboratory animals. This investigation is being continued to study the long term effects of lower concentrations found clinically in nature to determine whether or not pulmonary lesions are produced by prolonged exposure. •

ACKNOWLEDGMENT

The author sincerely appreciates the technical help offered by Miss Phyllis Williams and Mr. Lester McKay.

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Comments on coronary care

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The author discusses new standards of coronary care.

IT HAS BEEN ESTIMATED that there are approximately 21 million people in the United States at the present time with known heart disease. There are probably another 10 to 15 million with undiagnosed heart disease. Cardiovascular diseases account for over 50 per cent of the deaths in the United States. Any physician, even a layman, is aware of the magnitude of the problem. Great strides have been made in the diagnosis of all types of heart disease in the past 20 years. Advances in the treatment of congenital and acquired valvular disease have outstripped the imagination of the most optimistic physician of 20 years ago. Mechanical heart assist and even total heart replacement seem feasible today.

Coronary artery disease, notably acute myocardial infarction, remains a major problem. Until the last few years the management of the patient with coronary thrombosis had changed very little from that of the 1930's. Better understanding of the electrocardiogram and the introduction of serum enzyme tests have refined the diagnostic acumen of the physician. Anticoagulants have reduced deaths and morbidity from the complications related to mural and peripheral thrombi. However, most recent reports have continued emphasizing that in general hospitals throughout the country the mortality rates for patients hospitalized for acute myocardial infarction are as high as 30 to 40 per cent. Many of these patients die in irreversible shock and failure; many expire because of asystole or unexpected or protracted arrhythmia.

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Beginning in the early 1960's, the concept of coronary units utilizing constant cardiac monitoring equipment and alarm systems began to develop. From these units, reports of mortality figures as low as 11 to 20 per cent in acute myocardial infarction have begun to appear. This is true in spite of the fact that coronary care units often receive the more acutely and more seriously ill patients. In 1965 and 1966 a nationwide implementation of the concept of coronary care in specialized units began about the country. The majority of these were in the university hospitals and in institutions in which there was a special emphasis on the care of the cardiac patient. In many instances there was a great deal of concern about the design and physical construction of the units. However, the concept that there is both a need and feasibility of developing coronary care units in community hospitals of all sizes has developed. These require a greater flexibility and often adaptation to existing situations.

Washoe Medical Center, in Reno, Nevada, is a 415-bed community hospital. In the next two years it plans to expand to 765 beds. Washoe Medical Center does not have a staff of interns and resident physicians and must rely on the nursing staff as the first echelon of defense in medical emergencies. With these two factors in mind, a program of improving the care of the coronary patient which utilizes the present nursing staff and existing facilities was instituted in September of 1965. The first special coronary care bed was established at that time. This was a single bed adjacent to a nursing station, utilizing a bedside monitor unit with an alarm box at the adjoining nursing station. The second bed, directly across from the same nursing station, was put into service in December of 1965 (Fig. 1). In June of 1966 a seventeen-bed cardiac ward was opened, and since new specially planned facilities will be included in the addition to the hospital, no major

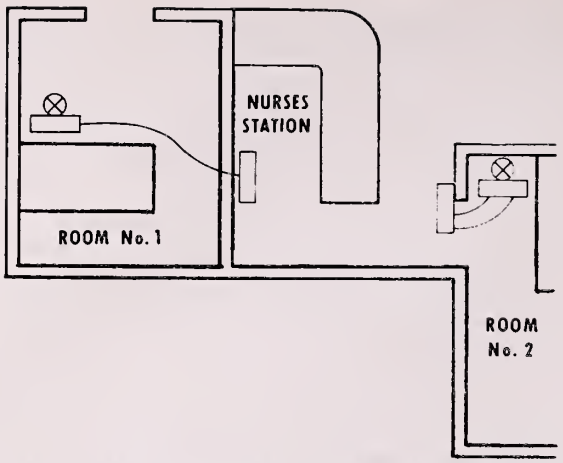

Fig. 1. Cardiac Care Unit, Washoe Medical Center

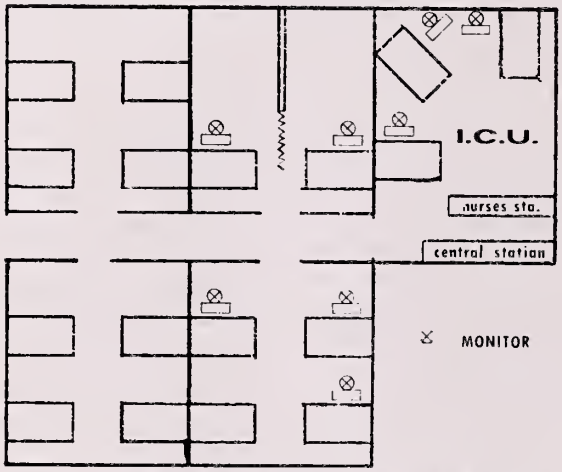

Fig. 2. Cardiac Care Unit, Washoe Medical Center

structural changes were made in establishing this unit. This coronary care ward gives facilities which provide graduated care (Fig. 2). Three beds in a room in which the nursing station is physically located and equipped with monitors provides a facility designated as the intensive cardiac care section of this unit. The adjoining room contained an additional two beds with monitors and a third four-bed ward contained three monitors in addition to a one non-monitored bed. This gives a total of eight monitored beds. In addition to these three rooms, two additional four-bed wards are served by the same nursing station.

The nursing staff assigned to the first unit initially underwent training on the job, without special classes, until they became familiar with the equipment, and a core of interested nurses was selected. Prior to the opening of the seventeen-bed ward, formal classes were initiated which included instruction in the equipment and in the anatomy and pathology of coronary artery disease. Sessions were given in the clinical course of both acute myocardial infarction and other types of coronary artery disease and arrhythmia.

Instruction in electrocardiography includes basic electrophysiology and the recognition of arrhythmias. Frequent informal discussions on individual problems in the interpretation of arrythmias are held on a day-to-day basis. A repeated instruction course covering the same areas as that in the original one was held in the fall of 1966 and it is planned that this will be repeated at six-month intervals. In addition to this, an intensive course in cardiopulmonary resuscitation was initiated in the spring of 1966 which was mandatory for all nursing personnel in the hospital. During the first year of training, nursing personnel are required to attend this course three times and, following this, at least once a year. This course includes demonstration and practice on manikins, as well as movies and slides.

At the present time data is available on a total of 151 patients who were monitored during the first year. More complete data is available on the first 49 patients monitored during the first six-month period, from Septemper of 1965 until March of 1966. Thirty-four of these had acute myocardial infarction.

Table 1

TOTAL HOSPITAL MORTALITY OF MYOCARDIAL INFARCTIONS

		Coronary Care Unit		
	1965*	1st 6 months Sept. '65 - March '66	2nd 6 months March '66 - Sept. '66	1st year Sept. '65 - Sept. '66
Total	126	34	57	91
Survived	89	27	48	75
Expired	37	7	9	16
Mortality	29.3%	20.6%	15.8%	17.6%

* Includes all in whom diagnosis was confirmed by EKG, whether monitored or not.

For comparison, charts of all patients (monitored or not) admitted during 1965 with a positive electrocardiographic diagnosis of acute myocardial infarction were reviewed (column one, Table 1). The mortality in this group of 126 patients was 29.3 per cent. These results reflect a significant difference in mortality between the patients placed in the coronary care unit and those in the other areas of the hospital. Of the first 151 patients

monitored, 91 proved to have acute myocardial infarction. Of these first 91 patients monitored, 16 died during their hospital stay for a total hospital mortality of 17.6 per cent. There was, however, significant difference between the first and last six months of the operation of the unit. As noted, 34 patients with acute myocardial infarction were monitored during the first six months. Seven of these patients died for a total hospital mortality of 20.6 per cent. During the second six months, 57 patients with acute myocardial infarction were monitored, 9 of whom died, resulting in a hospital mortality of 15.8 per cent. This significant improvement in mortality is attributed to better management and to early recognition and treatment of arrhythmias. It is felt that at least two of the patients who died during the first six months were possibly salvageable patients in that if the arrythmia had been treated early or recognized, they might have survived. Almost all of the patients who died during the second six-month period died with what was felt to be an irreversible condition. Some of these patients were in shock and did not develop a terminal *treatable* arrhythmia, such as ventricular fibrillation. One patient died of septal rupture and another of myocardial rupture. In all of these patients, heart rate gradually slowed and in at least three, the patient was apparently dead when electrical activity appeared to be continuing normally. The latter we have classified as primary "pump failure." Attempts at resuscitation were unsuccessful.

Table 2

ACUTE MYOCARDIAL INFARCTIONS

Total	Survived	Died	Mortality
34	27	7	20.6%
	NO PRIOR HEART DISEASE		
23	20	3	13 %
	PRIOR HEART DISEASE		
11	7	4	36.3%

There is a hard core of patients who have such severe and limiting coronary artery disease that salvage is virtually impossible. Most of these patients have severe preexisting heart disease. This is reflected in the difference in mortality as shown in Table 2. Of the first 7 patients who died, 4 had history of preexisting heart disease. Three had no prior history of heart disease. Of the survivors, 23 had no prior heart disease and 11 had prior heart disease. It becomes necessary, then, when discussing comparative mortality in coronary care units, to separate the patients into various risk groups. With patients with no known prior heart disease a mortality rate of 5 to 10 per cent can be approached. In the initial 34 cases the mortality was 13 per cent. However, in patients with preexisting heart disease, particularly when severe, one cannot anticipate this type of result. In the first 11 patients with prior heart disease, four died for a total hospital mortality of 36.3 per cent. Certainly those patients with progressive coronary artery disease are going to expire at some time, and often of a primary cardiac problem. Hence, hospital mortality figures of 20 per cent and greater must be expected in this group. Table 3 (based on the first 34 patients) adds further support to this thesis. The average age of the patient who died was 59. The average age of the survivors was 51. Maximal elevation of serum enzymes as a prognostic indicator is also reflected in a high level in those who died. Although arrhythmias were common in both groups, they were more common in those who died. The addition of shock had a strong adverse effect. All patients in the first group of 34 who were admitted in shock died.

Table 3

TYPICAL CLINICAL PICTURE

	Age	Max. SGOT	Arrhyth.	Arrhyth. or shock
Survived	51	103	60%	60%
Died	59	267	71%	100%

Another point should be emphasized in the hospital care of the patient with acute myocardial infarction. When coronary units first began to come into vogue, it was generally recommended that continuous monitoring be continued to approximately 72 hours. More recently, emphasis has changed—it is now often recommended that monitoring, at least on selected patients, be continued from 5 to 7 days. In Table 4 the results at Washoe Medical Center are compared with those at

Presbyterian Hospital in Philadelphia and Bethany Hospital in Kansas City. A major mortality occurs in all three institutions in the first three days. Perhaps the most important mortality occurs after the third day. Thirty-two to 52 per cent of the patients who die of acute myocardial infarction in all of these three hospitals die after the third day.

Table 4

DAY OF DEATH

FOR CONFIRMED MYOCARDIAL INFARCTIONS

Total Deaths Day of Death	Presbyterian Hosp. Philadelphia, Pa.	Bethany Hosp. Kansas City, Kan.	Washoe Medical Center Reno, Nev.
1st	31 %	48%	29%
2nd	34 %	56%	43%
3rd	48.2%	68%	57%
4-5th	62 %	80%	71%
6-10	75.8%	92%	86%
11-23	99.9%	100%	100%

Percentages are cumulative

It is to be emphasized that many of the patients who die in the first 24 to 48 hours are those patients for whom there is little chance of survival. Many of these patients are admitted in shock and severe failure with recurrent infarction. It is often the patient who has had sufficient myocardial reserve to survive the first 72 hours who develops a sudden unexpected arrhythmia. It is this patient for whom we can expect the greatest success in resuscitation and his eventual discharge from the hospital. The fact that the significant mortality occurs even beyond the seventh day speaks of the value of a graduated care unit in which the nursing personnel are tuned to the acute problems of the cardiac patient and are particularly well trained and most familiar with effective resuscitation.

Another role of the cardiac care unit that requires emphasis is the care of the patient who has *not* had an acute myocardial infarction. The value of the detection of the identification of paroxysmal arrhythmias and identification of the etiology of syncopal and Stokes-Adams episodes is clear. The utilization of loop tape units which record the electrical activity just prior to alarm situations and the first few beats of arrhythmias is invaluable in detecting, identifying and correlating such information.

In summary, it is our opinion that coronary care units are not only feasible and can be established in most community hospitals with little structural modification, but also that they are a virtual medical necessity. Utilizing trained nursing personnel as first line of defense in the care, monitoring and resuscitation of cardiac patients is not only feasible, but necessary, if there is to be a significant reduction in mortality in hospitals throughout the country, the majority of which are community hospitals without intern or resident staff. Even in hospitals which have house staffs, the nursing personnel must fulfill these roles, since successful resuscitation can be only accomplished if begun within the first 2 to 4 minutes after a cardiac arrest, *and most ideally within the first 15 to 30 seconds.*

In the past year, we have had few attempted resuscitations, probably because potentially fatal arrhythmias were detected early and appropriate treatment instituted. It may well be that only rare resuscitations will be the mark of the most effective unit, because any potentially salvagable patient will not have reached a state where resuscitation is required. •

Engineering in medicine*

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Careers are unlimited in the health sciences.

BIOMEDICAL ENGINEERING, as a recognized discipline, has emerged to fill the gap created by the tremendous recent increase in medical and engineering technology. The role of engineering ancillary to diagnostic medicine is not new. In the 1600's Boglivi and Descrates presented functional theories based upon a strictly mechanical approach, simulating the heart to a pump, lungs to a bellows and stomach to a grinding mill. Inability to follow up their mechanical systems with mechanical therapy as a means to prolong life discredited this theory and caused a barrier to stand between the evolving medical and engineering professions. This void has taken centuries to destroy.

In the last few years, engineering and life sciences have joined together in a partnership which has enjoyed a steady healthy growth despite their past differences and lack of mutual understanding. The most significant factor in the success of this union has been the acceptance and recognition of these professions on a mutual colleague level in research endeavor. Communications problems, the most commonly recurrent issue, have been dissipated. The limiting factor to this marriage of sciences has been the problem of coordinating the vast increase in medical knowledge with the advanced engineering technology amassed during the past decade. Engineers have developed an insatiable thirst for biological understanding and on occasions have returned to the classroom. Physicians have become familiar with the language and theories of engineering practices. From this united effort has emerged a medical teammate, the biomedical engineer, with a potential equal to the biochemist and biophysicist.

Now, since we have overcome the barrier which has existed for years between the professions and have fully entered as colleague participants in diagnostic and therapeutic medicine, we must remind ourselves periodically that, in becoming biomedical engineers, we accept an ethical responsibility to society which has not previously been demanded of the engineer. Physicians must learn to live with the engineers' insistence that there may be a logical answer to everything. Training of engineers has been based on mathematically provable formulae and systems. The world's greatest engineering accomplishments were first reduced to drawings and preliminary written instructions presented in a manner which made it possible for laborers and technicians of all trades and arts to perform their respective duties. By this method, it has been possible for coworkers to perform without requiring knowledge of or contact with his fellow craftsmen. This is true whether the end product be a bridge two miles long or an intricate mechanical or electronic device resting on the moon but controlled from earth. Separation of effort is no longer a barrier in the presence of mutual understanding. The satisfaction of such accomplishments is dwarfed by the challenges offered by the medical profession.

The ambitious engineer need not be satisfied to merely design and build biomedical instruments. An area of additional specialization is that of artificial prostheses, for example development of artificial heart, kidney and limbs. He will be driven by enthusiastic desire to learn more and more about the physiology of the natural organs he is attempting to replace. He will keep abreast of progress and research of other investigators, for example. Our work in cardiac valve replacement is under re-evaluation resulting

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from association with the author of a recent publication.* The evidence indicates that cardiac valves should be regarded as organs within the general morphology of the heart rather than as passive structures. In accepting this theory, we recognize a personal need for additional knowledge and research in anatomy and physiology, as well as the new work involved to replace a neurologically controlled mechanism with a physiologically acceptable prosthesis.

In addition, the biomedical engineer may attempt to quantitate and reduce to understandable mathematical questions the many variables involved in fluid dynamics. The best informed hydraulic engineer with his knowledge of flow, friction, pressures, chambers, pumps and controls would find this a challenge beyond his wildest imagination. Further, the variables in hemodynamics demand a basic understanding of the dynamics and angiography of the normal heart, and related problems: acquired and congenital cardiac defects, hypothermia, sounds of flow through various valves and chambers, to say nothing of the vascular changes during normal activity.

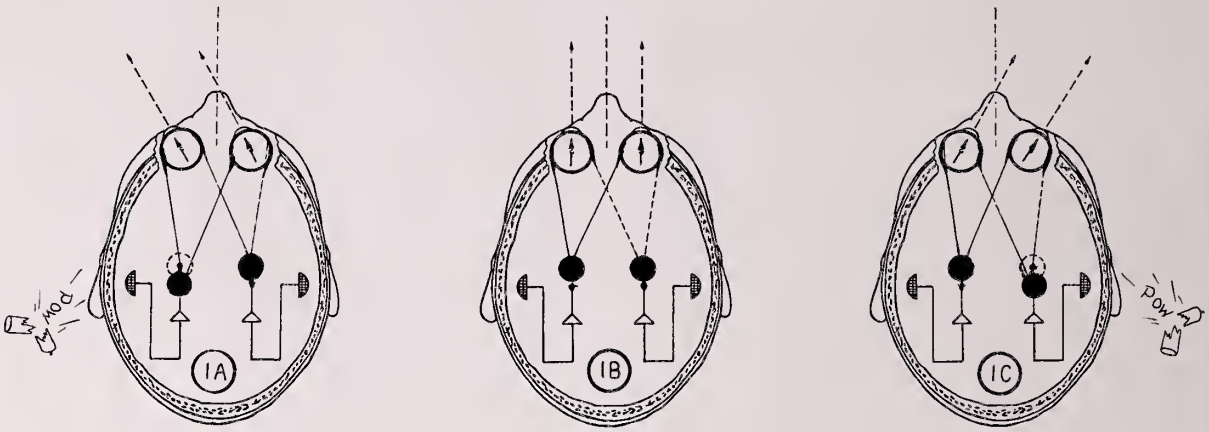

Fig. 1. Diagrams of mechanical-electronic aid in neuroanatomy demonstrating ocular response to sound.

The biomedical engineer may elect to follow research in biological systems in man and other organisms. Dr. E. C. Albritton from the National Institute of Health at Bethesda, Maryland, in his paper to the Annual Conference of Engineering in Medicine, November 14, 1966, hinted as to the magnitude of this challenging field when he stated, "One cell can furnish enough feedback circuits to keep 100 biochemical bioengineers busy for 100 years, and have most of the task left still unfinished."

Another field of endeavor, and one which offers an unlimited audio-visual potential, is designing and creating of functional teaching models. This field requires a thorough knowledge of anatomy, physiology and biochemistry, as well as artistic ability and engineering know-how. Visual aids have proven their worth in accelerated educational methods. The most simple functional models would reduce by hours the lecture-time now required for thorough presentation of a subject. An example is a mechanical-electronic neuroanatomy aid which demonstrated involuntary ocular response to sound. This model utilizes an audio pick-up, an amplifier and movable pins attached to free-moving eyeballs via simulated lateralis and medialis rectus oculi muscles (Fig. 1). Adding simulated eyelids with photo-electric cells geared to respond to moving objects (instructor's wand or pointer), as well as a servo mechanized means for demonstrating fixation, accommodation and convergence, and in addition, light-sensitive (photo-electric) iris controls offers no great challenge to the bioengineer. When considering, however, that we have demonstrated only a small portion of ocular movement and function, and that every organ, muscle, joint, and cell of the entire human and experimental animal body is involved, we can readily visualize many lifetimes of research effort being spent and giants of industry being built.

A few other exciting projects which might interest the newcomer to this privileged field

*R. H. Licata, Possible Reflexogenic Mechanisms Regulating Heart Valve Function, this issue, RMMJ.

include the following: 1. Power source for artificial heart. 2. Biologically powered pacemakers for Stokes-Adams patients or arrythmias. 3. Amplifiers for myoelectric controls. 4. Long range implantable telemetry systems. 5. Electrical anesthesia systems. 6. Better plastic and metal materials for implants. 7. Computer systems for diagnostic and therapeutic medicine. The rightful place of engineering in educational programs is being currently established. In some universities bioengineering is a stepchild of the engineering department. In others, it is attached to the medical school program. Some schools offer work leading to B.S. degrees. More and more higher educational institutions are offering work leading to a Ph.D.

From fifteen years' association with persistent investigators and clinicians, I would like to recommend the stimulating field of biomedical engineering to the young engineering or medical student, providing he is prepared to: 1. Approach all projects on a truly sound scientific level, 2. Recognize that it is a profession of team work, 3. Accept the life of a perpetual student, 4. Be open-minded to research efforts of others, and 5. Most important, realize that the patient is the first and ultimate concern of the medical profession and therefore a poorly conceived research program resulting in an inadequate product will be detrimental to the patient. Biomedical engineering is a young profession and its future depends on the integrity of the published results, persistence in searching out facts and acceptance by merit of performance. •

Possible reflexogenic mechanisms regulating heart valve function*

Richard H. Licata, MS, PhD, Reno, Nevada

Histochemical methods demonstrate further extension of the autonomic nervous system and its functional implications.

A HISTOCHEMICAL TECHNIC has recently been developed[1, 2, 3] whereby the presence of tissue catecholamines (adrenaline, noradrenaline, tryptamines) can be demonstrated in situ by means of fluorescence microscopy. Preparation of tissue for this purpose involves the exposure of membrane whole mounts to dry paraformaldehyde gas. Examples of specimens studied in this manner are mesenteries, meninges, mesosalpinx and the tissue under discussion, cardiac valves.

After exposure of membrane spreads to formaldehyde gas the contained endogenous catecholamines are condensed to isoquinolines or carbolines, which characteristically exhibit an intense green to yellow autofluorescence when examined with the ultra-violet microscope. The fluorescence exhibited is specific for the presence of adrenergic fibers located at the apparent effector sites. The fluorescence varies from green to yellow depending on the period of time elapsing between gas exposure and ultimate examination. Control tissues, particularly adrenal gland, were similarly studied in order to check the technic of preparation and validity of the optical system employed. By this methodology adrenergic systems represented centrally by neural nuclear centers (hypothalmic nuclei, caudate nucleus, etc.) and peripherally by neural fiber plexuses situated particularly at receptor sites, can also be delineated. This technic was applied to the study of cardiac innervation. During the course of this project

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it was found that intricate neural plexuses exist in all leaflets of the cardiac valves, namely, pulmonary, aortic, tricuspid and mitral (Figs. 1, 2, 3). The plexuses thus revealed can be presumed to represent adrenergic or sympathetic terminal extensions of autonomic origin.

Precedence for the presence or close relation of subendocardial neural networks to cardiac valves has been established by a number of authors[4, 5]. More recently, a cholinesterase study[6] employing a modified thiocholine method has conclusively identified plexuses of cholinergic terminals within cardiac valves. The cholinergic elements described represent parasympathetic neural extensions into the valve leaflets. The fibers in question have been presumed to be predominantly receptor or sensory in nature, possibly involving reflexogenic mechanisms concerning bulk and flow properties of blood as well as movements across valves.

Conversely, the adrenergic fibers reported herein therefore represent adrenergic sympathetic elements thus completing the implied neural reflexogenic arc by the contribution of an "effector" segment. However, these nerve fibers are not to be regarded as mere partial subendocardial extensions of similar plexuses from atrial levels, but represent adrenergic-positive nerve terminals which are extensively distributed throughout the territory of valve leaflets up to their free margins. The presumed effector field described was characterized by extensive delicate arborizations of beaded terminals. Profuse neural plexuses comprised of thick and delicate bundles of nerve fibers were also observed at the basal fixation of the valve leaflets particularly at zones of juncture with the annuli fibrosi. Additional fibers were found to extend into the related chordae tendineae. The innervation of the tendinous cords derive from two principal sources, namely, fibers which descend into the chordae as prolongations from the corresponding valve leaflets and fibers which similarly ascend from the related papillary muscles. The order of size and type of nerve fibers contained within the chordae were comparable to those in the remainder of the leaflet.

A neural apparatus comprised of integrated cholinergic and adrenergic systems

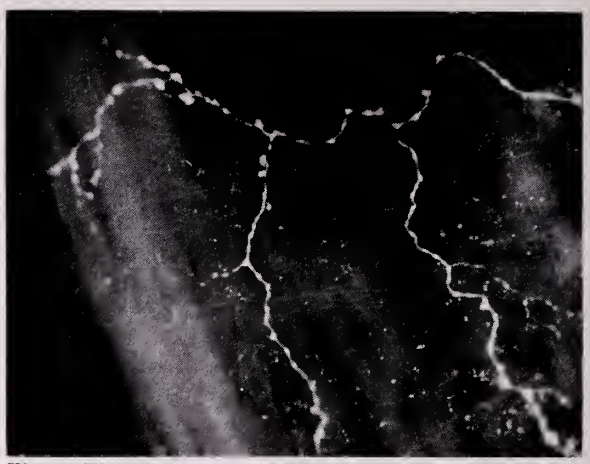

Fig. 1. Fluorescence microscopy of beaded adrenergic nerve terminals in aortic leaflet of mitral valve. X400.

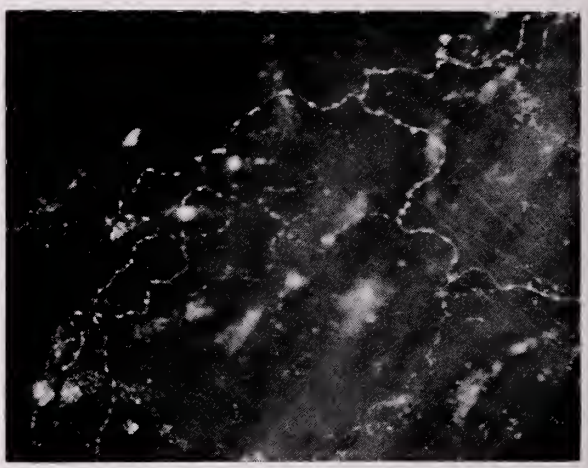

Fig. 2. Fluorescence microscopy of nerve terminals in cusp of aortic valve. Note that these fibers are more delicate than those in the mitral valve. X400.

Fig. 3. Fluorescence microscopy of beaded terminal in vicinity of chordae tendinae of mitral valve. X600.

therefore can be considered existing structurally and on a histochemical basis within all leaflets of cardiac valves. As a result of this, inter-neural union affector and effector

units are implicated in a possible reflexogenic mechanism regulating valve function. The cholinergic fiber segment of the neural apparatus can be assumed to be of vagal origin. Similarly, the adrenergic or sympathetic fibers are derived from the related sympathetic trunk. A mechanism for synchronization of valve function with the general heart action is taken for granted.

Consequently, a physiological experiment was contemplated in order to assess the possible role of the suggested neural apparatus. In this respect, it was decided to perform vagotomies on experimental animals in order to cause degeneration of the cholinergic filaments. It was hoped that in this manner the sensory arc (proprioceptive) of the neural apparatus would be destroyed and therefore render the interrupted reflexogenic mechanism faulty or ineffective thus resulting in dysfunction of valve action. Additional experiments designed to destroy the adrenergic or potentially motor arc via sympathectomy and catecholamine depletion by means of reserpine injection were also considered.

The following represent preliminary data of cervical vagotomies conducted on sheep. Initially, bilateral vagotomy was performed on young adult sheep, but the ensuing results were found to be far too deliterious to ensure a relatively long range animal survival necessary to achieve the neural changes desired. Unilateral vagotomies were subsequently decided upon as the procedure of choice. The animals vagotomized in this limited manner survived sufficiently long to produce a chronic experimental model compatible with the aims of the project. After a period of two to four weeks some neural degeneration was found to occur within the valve leaflets particularly in those of the homolateral side. The changes observed were generally expressed in terms of degenerative varicosities and fragmentation of principally cholinergic fibers. However, minimal degeneration of adrenergic fibers was also noted. The animal was then subjected to catheterization followed by injections of sodium iothalamate (angioconray) contrast material. Cineradiographic studies were conducted in conjunction with electrocardiographic recording in order to assess valve function and in particular to determine any disturbance of valve

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action particularly of the corresponding side.

The following preliminary indications were suggested by the data procured from the catheterization procedures. The data are based on left unilaterally vagotomized animals. In the limited number of sheep studied the cineradiographic and post mortem findings may be summarized as follows: suggested aortic valve regurgitation and mitral valve incompetence, right and left ventricular hypertrophy, left atrial fibrosis with minimal left focal fibrosis, atrial dilatation with elevation of right and left atrial pressures. The electrocardiographic findings were essentially accelerated conduction with abnormal changes of the S-T segment which persisted throughout the time of survival of the experimental animal.

Right unilateral vagotomies are being currently performed. In addition, sympathectomy and reserpinization of sheep are under study with the object of depleting catecholamine stores.

Although the physiological data thus far accumulated is inconclusive, it is nevertheless suggestive of the possibility of the presence of a functional reflexogenic mechanism influencing valve action. In any case, a definite neural apparatus can be said to exist based on structural and histochemical evidence. Final assessment of valvular action predicated upon a reflexogenic neural mechanism must be at least held in temporary abeyance and must be judged on the basis of considerably more intensive physiological corroboration. The development of more sophisticated and effective valvular prostheses will be greatly enhanced by a better evaluation of the anatomical and physiological status of normal valve function. •

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Supervoltage radiographic portal localization in x-ray therapy

Robert M. Taylor, MD, and John H. Anson, PhD, Las Vegas, Nevada

Radiographic methods aim at precision in oncologic therapeutics.

A SURVEY of current medical literature reveals a paucity of references to supervoltage radiography as a superior means of beam direction and portal localization in radiation therapy. Refreshment of the literature on this subject is indicated. In recent literature on this subject, McDonnel[1] expresses the concept that image production in such roentgenograms is achieved primarily from induced secondary photo electrons, and that the size of the focal spot of the radiation source is not an important factor in achieving image definition ("sharpness").[2] We respectfully disagree with the concept and feel therefore that reconsideration of the physical laws governing roentgenography is in order.

Physical principles

In the usual range of diagnostic potentials (up to 150 kv), photoelectric effect is the predominant method of energy exchange, and Compton scattering is regarded as an ever present nuisance which removes a few per cent of the incident beam, and through back and side scattering creates undesirable fogging of the diagnostic image. When photons from 500 to 6,000 kilovolts of energy are utilized, then elastic scattering from Compton effect is the predominant means of energy removal from the useful beam. Because Compton effect is the interaction of a photon with an electron, such events occur most readily where there is a relatively large number of electrons, i.e., in dense materials. Also, because Compton effect is an elastic collision, increasing the energy of the incident quantum yields a greater per cent of both scattered photons and recoil electrons which are traveling in a forward direction. Since the energy transfer by this method is a statistical variable, the resultant secondaries create a "noise level" which detracts from the information carried by the residual primary beam and produces fog on the recording medium.

Let us now consider the status on the film side of the diagnostic roentgenographic patient whose radiologist is using megavoltage radiation. First, there is the residual primary beam whose variations, being the result of energy transfer incidents, carry information about the tissue differences within the patient. These differences will be primarily of a density nature so that air (800 to 1 density change) will be demonstrated more strikingly than bony tissue (1.9 to 1 density ratio over soft tissue). As in orthovoltage technics, the angle over which this information is spread will depend on tube focal point-subject distance, and the sharpness of tissue shadows will be extremely dependent upon the size of the focal spot. This residual primary beam is the only source of useful, image-producing information. Second, there is a flux of scattered photons emerging with a large variety of energies and angles as a result of Compton collisions. Third, there is a cloud of recoil electrons which are the other products of Compton incidents. These electrons have linear ranges of travel from several centimeters in tissue to as much as 50 meters. Finally, there is a possibility of primary photons which have not encountered the patient due to anatomical orifices and apertures, or because the beam size exceeds the patient's dimensions.

All four of these energy-laden radiations will affect the recording media, at which level megavoltage radiography requires special

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technics and equipment. Paper or standard bakelite window cassettes are used, containing screens of a high density material such as lead which are required to convert the signal bearing photons into film activating electrons, to reduce the effects of scattered radiation, and to prevent electrons produced by cassettes closing flaps and fastenings from projecting upon the image. Reduction of field size by judicious collimation enhances image quality by the reduction of stray irradiation and secondary photon production, and also reduces patient exposures at any beam energy level.

Technical correlation

At Southern Nevada Memorial Hospital, the Model AM, 2 mev Van de Graaff accelerator is employed as the source of x-rays used for both diagnostic roentgenograms and for therapy. Eastman industrial film, Type M, is used, contained in nonscreen (cardboard) cassettes, which have been provided with front and back, 10 mil lead sheets. A double-exposure technic is employed, wherein the initial exposure, obtained at 125 cm focal skin distance (the same distance employed during therapy) is made with beam-shaping devices in position to exactly reproduce the therapy portal. Whereas the second exposure, superimposing the initial exposure, shows the surrounding anatomy of the area under therapy. Average film exposure technics, employing the 2 million volt beam, at 125 cm focal skin distance, at 250 microamperes require time exposures as indicated in the following examples: A. The nasopharynx and larynx—4 seconds (initial exposure of the therapy portal) and 6 seconds (second, superimposed exposure of regional anatomy). B. Antero-posterior radiograph of the chest, 7 seconds and 7 seconds, respectively.

Experience has shown that wide latitude in time exposures is inherent in the type of industrial x-ray film used, but the other principles of good radiography, especially immobilization of the object, and proper development and rinsing of the roentgenograms are still mandatory, as in conventional radiography. It should be noted that industrial film is not developed by the automatic processing units now widely employed in modern x-ray departments; hence our "standby" dark room facilities continue to have frequent, practical use.

Radiographic applications to therapy

The radiation therapist strives to attain two main objectives, namely, control of malignant neoplasia and preservation of the patient's life with as great degree of freedom from untoward symptoms from this therapy as possible. In achieving the former, almost always, high doses of ionizing radiation are required, thus emphasizing the necessity of close delimitation of the therapeutic beam to tumor bearing tissue, sparing surrounding, uninvolved tissue.

To aid in the achievement of maximum tumor dosage with minimum dosage to surrounding, normal tissues, Hare and his associates,[3] as early as 1951 began to develop technics obtaining roentgenograms employing x-rays generated at 2 million electron volts produced by the Van de Graaff unit used in administering x-ray therapy, enabling superior visualization of tumor tissue as well as beam direction and therapy portal localization. The Hare methods, by now greatly expanded and refined, are still effectively employed in many medical centers.

The most effective 2 mev roentgenograms are those obtained of anatomical areas where

Fig. 1-A. Large, sub-glottic carcinoma producing anterior displacement of larynx and almost complete obstruction of airway, requiring plastic tracheostomy.

Fig. 1-B. Roentgenogram at completion of course of x-ray therapy, revealing restoration of airway (without need for tracheostomy tube), and tumor regression.

air is contained in the tissues for contrast, or where air can be introduced by insufflation or in air containing instruments; hence the region of the paranasal sinuses, nasopharynx, larynx, and lungs provide the optimum areas for application of these technics. In these areas normally containing air there is maximum application of the physical principle of disparity of tissue absorption of low energy radiation (like between bone and fat), whereas at higher energy levels (above 1 million electron volts) this differential tissue absorption approaches unity. Thus at the 2 mev range the visualization of bones becomes minimal, and soft tissue structures, with contained air for maximal contrast, are best seen. McDonnel has very aptly referred to this phenomenon as a "composite laminagram of the chest."[4] Experience has shown many instances where tumor tissue in appropriate anatomical areas is better visualized by supervoltage roentgenograms than by routine, lower voltage studies.[5]

Beam directioning and portal localization as controlled by supervoltage radiographs becomes increasingly more important as multiple oblique portals are employed, or as the more exotic portal therapy applications are employed. For instance, we depend upon guidance of such roentgenograms in the accuracy of establishing right and left anterior oblique, and right and left posterior oblique therapy portals in treating carcinoma of the urinary bladder (in an attempt to minimize the post-therapy proctitis so often complained of by such patients) using, for contrast, air contained in the balloon of a Foley-bag catheter introduced into the urinary bladder preceding the supervoltage radiographic exposure.

CASE REPORTS

Case 1. Fig. 1 represents a 56-year-old white female with biopsy-proven squamous cell carcinoma arising from the right vocal cord with sub-glottic extension. Fig. 1-A indicates almost complete airway obstruction, gross anterior displacement of the larynx, requiring a plastic tracheostomy tube for initiation of 2 mev x-ray therapy. Evidence of need to enlarge and adjust therapy

Fig. 2. Widespread (primarily) pleural metastases from bronchiogenic carcinoma of right upper pulmonary lobe.

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Fig. 3-A. Advanced right upper lobe bronchiogenic carcinoma with left trans-diaphragmatic, epigastric metastatic mass.

portal upward and posteriorly illustrates the value of this "double-exposure" portal roentgenogram. Fig. 1-B, obtained at the time of completion of a course of 2 mev x-ray therapy with administration of 6,500r (tumor dose), six weeks later than Fig. 1-A, shows encouraging tumor regression, and restoration of the larynx to a normal anatomical position, with airway no longer requiring tracheostomy.

Case 2. Fig. 2 indicates a 60-year-old white male, three years after his initial course of cobalt-60 teletherapy for biopsy-proven bronchiogenic carcinoma of right upper pulmonary lobe. Widespread pleural metastases, accompanied by severe pain required judicious irradiation of extensive areas of the right hemithorax, with placement of a central, right pulmonary radiation-absorber, aided by 2 mev radiograph as shown. Fig. 2 might lend support to the controversial opinion held by some oncologists that the entity, pleural mesothelioma, is, in fact, only pleural metastasis of bronchiogenic carcinoma.[6]

Case 3. Fig. 3 represents a 40-year-old white male, a heavy smoker for 20 years, with biopsy-proven bronchiogenic carcinoma of the right upper pulmonary lobe, with atelectasis, effusion, bilateral hilar, and bilateral supraclavicular metastatic

Fig. 3-B. Adaptation of therapy portal to incorporate intra- and extra-thoracic disseminations.

malignant lymphadenopathy. This patient likewise complained of persistent, upper gastro-intestinal "fullness." In Fig. 3-A, observe the soft tissue mass superimposing the medial aspect of the "stomach bubble," which mass was not demonstrable by routine upper gastro-intestinal roentgenograms; this represents the only convincing demonstration we have ever seen of the trans-diaphragmatic, epigastric malignant metastases which not infrequently occur as one of the terminal, severely symptomatic phenomena of this disease. Palliative radiation therapy was administered, as illustrated by Fig. 3-B, to this area as well. The remarkable primary tumor regression, absorption of right lobar pleural effusion, and re-expansion of the right upper pulmonary lobe occurred as an "anti-climax" in the otherwise retrograde clinical course of this patient.

Summary

"Double-exposure," supervoltage roentgenograms, best obtained employing a radiation source with a small focal spot, improve the visualization of tumor tissue where air can be utilized for contrast. Increased accuracy of therapy beam direction and portal localization thereby enables safer administration of high tumor doses, by more reliable exclusion of normal tissue from the therapy portal. •

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Renal and splenic trauma

Richard E. Nilsen, MD, Las Vegas, Nevada

THE FOLLOWING is an unusual case history of traumatic hematuria and renal ileus followed by a delayed subscapular splenic hemorrhage.

CASE HISTORY

Admission: A 15-year-old white male who was injured in an automobile-motorcycle accident on the afternoon of admission. He was taken by police ambulance to the closest emergency room where he was examined by the attending physician and dismissed. Four hours later his family physician was summoned to his home because of his apparent disorientation. At the time he was noted to have gross hematuria, voiding what appeared to be fresh blood. He also sustained a momentary episode of syncope. He was taken immediately to Sunrise Hospital. Physical examination was unremarkable except for multiple abrasions and contusions.

Course: The patient was placed on strict bed rest and regular monitoring of vital signs for any indication of marked hemorrhage, shock, or increased intracranial pressure. There were no further untoward episodes or lapses of consciousness, but gross hematuria persisted. An intravenous pylogram the next morning revealed symmetry of renal size, configuration and outline; there was bilateral abnormal dilitation of both ureters, more marked on the left than right; both ureters followed a normal course and exhibited satisfactory drainage. In view of adequate renal drainage it was elected to keep the patient on strict bed rest and to follow each urine, as well as vital signs, for any indication of increased renal hemorrhage. Hematuria gradually decreased over the next five days. The patient did well on this regimen and five days later a follow-up IVP was normal. Urinalysis at this time was also normal. The final diagnosis of the patient's renal problem was traumatic echymosis of left kidney with a post-traumatic renal ileus.

On the afternoon the second IVP was obtained the patient developed sudden midepigastric abdominal pain, pain in the left shoulder, nausea, vomiting, and a marked pallor. Examination revealed marked left epigastric tenderness, decreased bowel sounds, firm rigid abdomen, and an abdominal tap produced fresh blood. An emergency laporatomy was performed and a delayed ruptured spleen removed. Approximately three units of fresh blood were found in the abdominal cavity at the time of surgery. It was also noted that marked echymosis were present over the left kidney. He was given three units of blood during and immediately after surgery. His post-surgical course was uneventful, and in subsequent visits the patient has continued to do well.

Final Diagnosis: (1) Contusion of the left kidney; (2) delayed subcapular splenic rupture and hemorrhage.

This case report illustrates the need for careful and prolonged observations of patients who sustain trauma. •

Michael Reese Hospital Staff Alumni Association

The Alumni reunion luncheon and banquet will be held Wednesday, May 31, 1967. The annual reunion program will include morning clinic and lunch at the Michael Reese Hospital and Medical Center. The Alumni reunion banquet will be held at the Standard Club. The cocktail party will start at 6:30 p.m.

Former house staff and present attending staff members are urged to make reservations at once. Michael Reese Hospital Alumni Association, 29th St. and Ellis Ave., Chicago, Illinois 60616.

Before and after a residency program*

S. De Lee, MD, A. Consiglieri, MD, O. Wong, MD, Las Vegas, Nevada

This review indicates the need for regional medical education and training programs.

On September 1, 1964, a little more than two years ago, Nevada established its first residency training program. This residency was in the Department of Obstetrics and Gynecology of the Southern Nevada Memorial Hospital. Residents are here as an integral part of the San Francisco Catholic Hospital Residency Training Program. It is our purpose to relate what has taken place in this department since then. In the March, 1966 issue of this journal an article entitled "Transition to a Residency Program" appeared. This discussed the reorganization that took place at the hospital and anticipated much of what has occurred.

There have been many changes for the better, but it would be unfair to credit these improvements entirely to formation of the teaching structure. In the past two years the benefits from new specialists in this field have made an impact, especially since instead of four qualified specialists, the current number is nine. All of these doctors have participated in furthering the interest of the hospital and department by teaching the residents, holding clinics, aiding in management of complicated obstetric and gynecologic cases, as well as taking an active interest in conferences, case presentations, and the like. Although at an earlier date, the doctors who carried the work load were competent, because of the number of patients and lack of specialists there was an admixture of generalists to share this responsibility. This is no longer necessary and the general practitioners have been relieved by specialists and residents.

*From the Southern Nevada Memorial Hospital, Las Vegas, Nevada.

It is our conviction that prerequisites inherent in a residency program have been a tremendous factor in the improved quality of the medicine practiced. Before, controls were not as rigid as now. We know that strict rules may not prevent all wrongdoing, but they make it easier to do things correctly. Specifically, it became mandatory for the development and formation of teaching programs for the residents under regimented conditions and certain patient services, all to satisfy the standards of the American Board of Obstetrics and Gynecology, and make the residency acceptable for formal training. To be more explicit, the following have been given due consideration: bylaws, clinics, conferences, and supervision of residents' work.

The prominent role of the bylaws has been a salvation for many mothers as well as unborn and newborn infants. Table 1 demonstrates infant mortality rates for Clark County, all Nevada, Nevada exclusive of Clark County, and for the United States. The latter

Table 1
INFANT MORTALITY RATES

	1963	1964	1965	1966*
Clark County	29.9	29.7	22.8	22.6
Nevada	30.4	29.5	24.8	26.7
Nevada (exclusive of Clark County)	31.1	29.2	27.4	31.0
United States	25.2	25.3	24.8	....

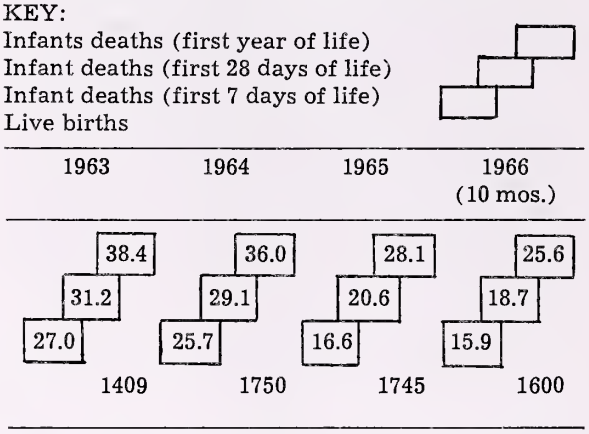
*Through September 15.

is quite constant. One important observation is the high rate for Nevada exclusive of Clark County as compared to the county itself, showing how the county aids in the reduction of the rate for the state of Nevada. In Clark County alone, where nearly 5,000 babies are delivered annually, a salvaging of 35 infants would have occurred in 1963 and 1964, and prior, had the same rate existed, assuming the number of babies delivered was the same. More dramatically, the drop from 29.7 per

1,000 in 1964 to 22.8 in 1965 represents a reduction of 23 per cent in the infant mortality rate (and most of 1966 indicates an even greater improvement).

Table 2 shows the perinatal and infant mortality rates for Southern Nevada Memorial Hospital for 1960-1966, as well as the number of deliveries during this period. The figures speak eloquently for themselves. We are proud of the reduced rate for the first seven days of life (about a 40 per cent improvement). These statistics are the more impressive when one considers that one-third of our patients are the clinic group and one-third of these are classified as "drop-ins"—those patients who have no prenatal care. Many of the latter present themselves for the first time suffering from severe toxemia (including eclampsia), anemia, malnutrition, hemorrhaging and other "high risk" complications.

Table 2
PERINATAL AND INFANT MORTALITY



The departmental bylaws themselves control certain procedures that were known to have been used injudiciously at times. INDUCTIONS: There was a time when these were done at the discretion or convenience of the doctor and too often when a cervix was not "negotiable." Review of some early charts revealed this as the probable cause of some fetal loss, with attendant prolonged, infected labors, often associated with operative interference. This problem, with an occasional exception, is a thing of the past. OXYTOCICS: The hazards from these have been eliminated by detailed controls which pertain to induction as well as to augmentation of labor. Use of each drug has its own rules defined. CESAREAN SECTIONS: Before a primary section can be performed, two qualified consultants must first give their sanction. The incidence, once high, is now under 4 per cent, comparing almost exactly with the nation's. PROLONGED LABOR: Consultation is mandatory where labor exceeds 24 hours, and is encouraged anytime a problem is anticipated. Medical consultation is obtained as needed—to share the responsibility and management of diabetics, cardiacs, etc. Consultants are always available, come quickly, and teach residents who are present when the patients are evaluated. CLASSIFICATION: Like other progressive hospitals, the members of the staff are grouped carefully according to their capabilities and no one is attempting to do that for which he is not qualified. Even in the "grandfather clause" concessions, the Quality Control Committee backs this principle and prevents untoward results. In fact, with the establishment of the program every case (private and clinic) is subject to open evaluation and discussion. This committee reviews breaches of bylaws, questionable procedures, and acts of neglect. The reviews are carried out in an impartial and dignified manner with no embarrassment to the involved physician. It is emphasized to him that our purpose is to assist him in aiding patients, and this through an educational approach. Very few infractions of the rules arise.

The obstetric and gynecologic clinics have grown considerably in volume of patients, much out of proportion to the population increase. This is for many reasons, some of which are obvious. There is now good organization, and availability of the service has been advertised, patient to patient. Further, prior to the formation of the residency program, there was no gynecologic clinic and no elective surgery in this field, the emergency work being consigned almost exclusively to the Department of Surgery. Now, all gynecologic procedures for service patients are done by the appropriate department. The clinicians and the residents are in constant search for operative pelvic pathology. Table 3 illustrates the attendance the Ob-Gyn clinics have had these past two years. The fewer obstetric visits is something na-

tionally observed. The great gynecologic increase is quite significant, and it is likely that the presence of a second resident has been a factor.

Table 3
TOTAL OB-GYN OUTPATIENT VISITS FROM AUGUST 1963 THROUGH DECEMBER 1966

	1963	1964	1965		1966	
	Ob	*Ob*	*Ob*	*Gyn*	*Ob*	*Gyn*
January	....	109	182	....	207	112
February	....	133	159	60	238	143
March	....	178	172	85	231	104
April	....	157	249	0	233	94
May	....	138	218	90	249	93
June	....	144	259	98	196	150
July	....	153	240	43	162	102
August	77	183	290	142	196	112
September	87	*220	278	133	198	108
October	117	252	249	2	196	110
November	58	235	271	98	190	114
December	129	240	199	110	184	102
Total	468	2242	2792	858	2347	1342

*Residency begins.

Table 4 reveals the vast increase in major and minor procedures the residents are doing. As an example, five times as many vaginal hysterectomies and more than twice as many abdominal hysterectomies were done in 1966 as in 1965. Also there was an increase in the number of oophorectomies, D&C's, and several other operative procedures.

Conferences are weekly luncheon meetings, wherein statistics are reviewed, cases are presented and discussed, and at times a guest speaker offers a contribution. Also, once a month, Doctor Gerald P. O'Hara, Director and Coordinator of the Obstetric-Gynecology Program at San Francisco Catholic Hospitals, and Chief of the Department of Obstetric-Gynecology, St. Mary's Hospital, San Francisco, holds a special meeting and the previous four weeks work is reviewed and plans for further progress are made. The residents have weekly courses in pathology, and are instructed in radiology and roentgenology by cooperating boarded specialists. Daily rounds are made with the residents by the attending physician on duty, at which time case analysis and teaching are done. Also, the Administrator and his assistant talk weekly with the residents, on an informal basis, discussing administrative problems of interest to the physician. Such matters as the use of fetal electrocardiography being incorporated into the teaching program and the difficulties involved with transition from anesthetists to anesthesiologists are reviewed, as well as many other diverse subjects that broaden their education.

Although an independent department, pediatrics has also been a factor in our improved infant survival rates. In 1964 there was only one pediatrician on the staff at Memorial, a board-eligible and dedicated physician who donated much of his time to the babies of clinic patients. He was greatly taxed by this burden, for his private practice was also substantial. Today, only two years later, we can boast of six boarded or board-qualified pediatricians, and there is no doubt that the improved statistics are in part due

Table 4
OPERATIVE GYNECOLOGIC PROCEDURES

	Sept. 1964-Dec. 1965 Resident acting as		*Jan. 1965-Dec. 1965 Resident acting as*		*Jan. 1966-Dec. 1966 Resident acting as*	
	Surgeon	*Assistant*	*Surgeon*	*Assistant*	*Surgeon*	*Assistant*
Exploratory laparotomy	1		1	1		
Tubal ligation						2
Abdominal hysterectomy	2	5	11	32	24	43
Vaginal hysterectomy	3	5	4	28	21	16
Salpingectomy			3	9	2	14
Oophorectomy			1	1	8	4
Cesarean section	7	3	13	28	16	35
Cesarean hysterectomy					1	
Conization of cervix			2	3	4	15
D & C	23		61	10	77	17
Anterior Colpoplasty			3	1		
Bartholin cyst excision			2		7	
Shirodkar			1			
Culdoscopy			1	2	1	

to the growth of this group. The clinic is larger, and rotation of the larger pediatric staff makes the care of the newborn more complete and efficient. This division of work benefits the patients.

By way of summary it should be said that we have attempted to briefly tell the story of what transpires when a vigorous residency teaching program is established in a relatively large community without a medical school. Las Vegas has close to 150,000 people and Clark County nearly 300,000. Not only the community benefits, but the medical profession enjoys an enlightening metamorphosis. Previously unavailable, yet necessary, services become a reality. Morbidity and mortality rates drop, yielding a population that is healthier and longer-lived. Certainly this has been the situation in the specialties under discussion. Further, better trained doctors are attracted, those yearning for an academic environment, and from this, too, the people benefit from the harvest of improved quality. As for the physicians, they are gratified by the excellent trends, and find new respect from the grateful public. This type of success breeds further success, and other major departments are already preparing their structural standards, so they too can establish comparable programs. Physicians, who are as a group most diligent in the pursuit of excellence, have found satisfaction in achieving these goals and in the opportunity to contribute in a significant way to the welfare of their community. •

ACKNOWLEDGMENT

We wish to acknowledge the generous assistance of Doctor Otto Ravenholt, who supplied most of our statistics and offered constructive editorial comments. Doctor Ravenholt is the Medical Director of the Clark County District Health Department and Director of the Nevada State Department of Health and Welfare. We are also grateful to Doctors H. McKinnon, G. O'Hara, and J. Rojas for their critical review and suggestions.

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Pseudotumefactive xanthogranulomatous pyelonephritis

Hoyt B. Miles, MD, and James W. Decker, MD, Reno, Nevada

Case reports of an unusual renal lesion.

XANTHOGRANULOMATOUS PYELONEPHRITIS, an unusual entity of uncertain etiology, is difficult to differentiate clinically, radiographically, and at the operating table, from renal tumor. The microscopic appearance resembles renal cell carcinoma. Seventy-one cases have been reported to date. This reporter's conviction, however, is in agreement with other authors, that the actual occurrence is higher than one would assume from a review of the literature.

At least two cases have been misdiagnosed microscopically as renal cell carcinoma. The first five cases of granulomatous pyelonephritis reported by Schlagenhaufer in 1916, probably were not true examples of this entity. Putschar, in 1934, recorded the first cases in which the microscopic appearance was compatible with those presented in subsequent reports. Two cases are presented.

Case 1: Mr. L. K., Caucasian male, age 22 years, was seen in August 1961, having been referred because of an illness of two months' duration, characterized by pain in the flank with a palpable mass accompanied by fever, malaise, nausea, headaches, and persistent leukocytosis, which had not responded to numerous antibiotics. Urine cultures were negative after he had received antibiotics.

Excretory urography revealed enlargement of the left kidney with impairment of function, distortion of the pelveocalyceal system and possible parenchymal infiltration of the kidney. At cystoscopy, the retrograde pyelograms were suggestive of a localized cystic or solid lesion. At nephrectomy, a large, irregular, yellow-brown kidney, weighing 303 grams, was removed. The patient had an uneventful recovery and has remained well during the six subsequent years.

Case 2: Mrs. P. C., Caucasian female, age 31 years, was seen in March of 1965 because of an acute pyelonephritis characterized by pain, tenderness in the right flank, fever, chills, malaise, nausea, vomiting, leukocytosis and urinary symptoms. The excretory urogram revealed a large, poorly functioning right kidney with the pyelographic appearance suggesting cyst or tumor. At cystoscopy, the retrograde pyelogram confirmed impairment of function with a bizarre, distorted and enlarged kidney with a suggestive mass. E. coli was cultured from the kidney urine.

At operation, a large kidney, weighing 390 grams, was removed and presented a bulging, bosselated appearance throughout the surface, with granulated, yellow-tan, and browning areas. There was no distinct cortical architecture and the medullary portion was effaced by the yellow-tan, bulging, infiltrating process. There were multiple abscesses throughout and numerous small calculi were present within the kidney parenchyma. Postoperatively, this woman did well, recovered rapidly, and has remained well to date.

The etiology of this entity remains obscure. Organisms of the E. coli group, as well as staphylococci have been cultured from most of these cases. The gross lesion is a yellow tumor, replacing a portion of the kidney. Microscopically, however, the picture is that of a granulomatous reaction, characterized by masses of lipid-containing macrophages, with associated inflammatory infiltration. These cells are probably resting, wandering cells, or possibly true fibroblasts. Suppuration is a constant and prominent factor with accompanying bacterial infection, subsequent tissue destruction, and liberation of lipid which calls forth the histiocytic response. Other possible etiologic factors are: 1. Possible metabolic defect with secondary inflammatory reaction; 2. renal vascular insufficiency, and 3. ureteral obstruction.

This condition is not an early stage of renal lipomatosis, which may follow any disease which causes atrophy of the kidney and is characterized by the presence of mature, adipose cells, derived from the fibro-adipose tissue normally present in the renal sinus.

Special staining technics by Saad and Fine demonstrated that the lipids present in the vacuolated cells were predominantly neutral fat and cholesterol esters. The large number of inflammatory cells would tend to incriminate infection as the primary process.

In support of a possible metabolic defect as a contributing factor, is the observation that there is a lipid increase in the renal tubules of lipoid nephrosis and likewise, increase in lipids as demonstrated by Windhouse in glomerulonephritis. Perhaps blood lipid studies will be correlated more with this problem in future investigation. Rios-Dalenz and Peacock called attention to the fact that although there was no evidence of a hypercholesterolemia, or hyperlipemia, a subtle disturbance of lipid metabolism should be considered and studied. Possibly obstruction and infection of a kidney in a patient with abnormal lipid metabolism could produce a xanthomatous reaction. Experimentally, Waddel, et al., were able to produce xanthogranulomatous inflammatory lesions in the lungs of rabbits with high blood lipids by means of intra-tracheal instillations of gram negative bacteria. The similarity of this process in the kidney to lesions seen in other organs, such as the lungs and retroperitoneal granulomata supports the concept of a reactive condition to the accumulation of lipids secondary to cell injury. Obstructive uropathy, such as the impedence of urine flow, due to stricture, calculus, or aberrant blood vessels probably plays a secondary role. Calculi which may be present in some instances can be accounted for on the basis of obstruction and infection. The possibility of vascular compromise and impairment is an intriguing one.

Summary

Xanthogranulomatous pyelonephritis is unusual and difficult to differentiate from malignancy of the kidney. There is enlargement and distortion, with impairment of renal function, as demonstrated on excretory urography. The pyelographic appearance suggests renal tumor or cyst. Needle biopsy of the kidney is of doubtful diagnostic value. At least two cases were diagnosed, postoperatively, as renal cell carcinoma. Treatment is nephrectomy, and prognosis appears to be good. The individuals, usually in the third or fourth decade, have recovered without involvement of the contra-lateral organ and bilateral involvement has not been reported.

Two additional cases of this unusual entity are reported and attention is directed to salient etiologic diagnostic and pathologic features. •

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Diverticular disease in the distal colon

Walter F. Quinn, MD, Reno, Nevada

A disease of increasing importance in an aging population.

THE ACQUIRED, saccular, mucosal herniations which occur through gaps in the muscularis of the colon are diverticula. Inflammation in any of these outpouchings is termed diverticulitis; in the absence of any apparent inflammation the condition is diverticulosis. Diagnosis of prediverticulosis can sometimes be made by the radiologist from a characteristic shadow due to muscular changes in the colon. Bleeding can occur as a complication of diverticulosis, but the complications of diverticulitis are those more likely to endanger the life of the patient.

Incidence

According to the best estimates of numerous statistical studies, about 10 per cent of the population over 40 years of age show diverticulosis. It is seldom encountered before that age. The frequency with which this disease is found in the general population will increase in numbers with each decade thereafter. Welsh states that two-thirds of those in the ninth decade show diverticulosis. Of all of any age with diverticulosis it is estimated that about 20 per cent develop diverticulitis, and, of these, about 15 per cent develop a complication which requires surgical intervention. Diverticulosis is about equally distributed between the sexes, but the complications requiring surgery are more common in the male.

Distribution

The sigmoid flexure of the colon is the commonest location for diverticula, but they can and do occur throughout the colon. The anatomic fusion of the longitudinal muscles to form a sheath covering the rectum makes them rare in this area. Edwards believes that diverticulosis starts in the sigmoid colon and extends proximally. Boles and Jordan documented 294 cases followed for many years which initiated in the sigmoid and extended proximally. Horner reported that in 47 per cent of his cases the sigmoid colon was the sole site of the disease, and in 95 per cent of all cases the sigmoid was involved. Most of the complications occur in the sigmoid colon with the descending colon being the next most common site.

Etiology

Etiology of diverticulosis has long been debated. Neurologic factors have been suspicioned, but Morson found Meissner's and Auerbach's plexi normal. Muscular changes in the involved segments of bowel are a consistent finding; the circular muscular fibers are thickened, fluted or concertina-like in appearance, while the longitudinal muscles are thickened and at surgery often feel cartilaginous in consistency. Segmentation of the colon takes place by contraction of the muscle fibers of the intrahaustral rings. Painter states that the segmented colon is converted into a series of "little bladders" whose outflow becomes obstructed, and in consequence, very high intracolonic pressures are generated and are responsible for the pulsion force that causes diverticulosis. Diverticula are usually along the segmental blood vessels. These mesenteric blood vessels separate into two branches before piercing the circular muscles of the bowel wall on its posterolateral aspect between the mesenteric and antimesenteric longitudinal muscle bands, and the openings made by the vessels cause weak points.

Medical management

Diverticulosis when symptomatic produces at most only mild symptoms of flatulence, distention, and disordered bowel action. Prediverticulosis and diverticulosis are usually asymptomatic, discovery being made by

radiologic examination. Because of this lack of any symptoms there are physicians who feel that these patients do not warrant any treatment. It has been shown however, by Carlson and Hoelzel, that diverticulosis may be produced in rats fed on a low residue diet, while rats fed on a bulky diet are relatively free from the disease. It seems logical then that patients should be continued on a regular diet, avoiding certain indigestible fibers and particles such as corn, berries with large seeds, and nuts of all kinds. Non-irritating bulk seems to inhibit segmentation and thus keep down high intracolonic pressures. Demulcent bulk should therefore be added using preparations made from psyllium seeds, and remembering that with any of these various mucilaginous preparations an adequate fluid intake must be maintained. Failure to take adequate fluid may dry the stool, and if so it may be desirable to add a wetting agent to insure a soft stool.

The symptoms of diverticulitis depend upon the degree of inflammation that is present. They may consist of only a mild pain in the left lower quadrant, nausea, flatulence, constipation, alternating at times with diarrhea, through all gradations to severe attacks with nausea, vomiting, cramping abdominal pain, fever, leukocytosis, elevated sedimentation rate, tenderness, rigidity, rebound (left sided appendicitis), evidence of obstruction, palpation of a mass, and abscess formation. It may progress to any of the complications which demand surgical intervention.

The medical treatment of diverticulitis is management of the symptoms. Morphine is contraindicated, as is prostigmine. Painter and Truelove have shown that both morphine and prostigmine increase intraluminal pressures and enhance segmentation. Meperidine diminishes sigmoid intraluminal pressures and tends to inhibit segmentation so is the preferred drug for pain. Antibiotics, antispasmodics, gastro-intestinal suction, intravenous fluids are often all indicated.

The successful medical management of diverticular disease requires a careful follow-up in an effort to avoid exacerbations and prevent complications. Never assume that recurrent symptoms are due to exacerbations or recurrent disease but prove it. Repeat proctologic examinations and repeat radiologic examinations are a part of the follow-up. Remember that diverticulitis is most common in the age group that develop most of the neoplastic colon disease. The coexistence of carcinoma with diverticular disease is not uncommon, and many times the differential diagnosis cannot be made short of surgical exploration.

Surgical management

The operative treatment of the complications arising from diverticular disease of the distal colon, as well as the performance of an elective procedure for this disease, requires sound surgical judgment and the adherence to the basic principles of colon surgery. Serious complications may occur in diverticulitis, and at times a complication may be the first indication that the patient has the disease. Obstruction of the bowel, perforation, pericolic or colic wall abscesses, fistulae (colovesical, ileocolic, colocolic, colovaginal, or cutaneous) and intermittent bleeding or massive hemorrhage. The latter complication has been reported occurring in diverticulosis without evident diverticulitis.

Multiple stage procedures will continue to be necessary for the urgent operations demanded for complications, and must be used in those elective operations in which extensive inflammation is found and a safe anastamosis cannot be made. The most common procedure is right transverse colostomy, followed in 4 to 9 months by resection of the diseased segment of bowel, and later closure of the colostomy. Exteriorization by a Paul Mikulicz resection is rarely possible in this disease as the inflammation has caused shortening and rigidity of the bowel as well as the mesocolon.

A more aggressive approach to reduce the morbidity and economic loss to the patient with diverticulitis has been adopted since the early 1950s. Emphasis has been placed on eliminating the unsatisfactory procedures formerly used, such as attempting to close the perforation, resecting a diverticulum, or closing a colostomy with the diseased bowel remaining in place. In selected cases removing the diseased segment by a one stage resection may be elected. The one stage re-

section is most often used in the younger age group, from 50 to 55 years, with intractable diverticulitis in spite of good and adequate medical treatment, with subacute obstruction, with walled off perforation, with recurrent bladder symptoms in the absence of demonstrable urologic disease, in the persistence of a palpable mass, where there is inability to exclude carcinoma, and with bleeding not controlled by conservative means. All other sources or causes for the bleeding must be ruled out before surgery is indicated for bleeding in diverticular disease.

The elective procedure allows time for proper preparation of the patient. The goal is the one stage resection, but the decision will be made only at the operating table. The operation must be safe and tailored to fit the findings; we cannot lose a patient because of peritonitis, infection, break down of the anastomotic site, obstruction, or complications of any type. The basic principles of colon surgery cannot be violated, and surgical judgment must be sound.

Summary

Diverticular disease in the distal colon is becoming more important as more people are living longer. After age 40 the incidence rises in each decade. Increased knowledge of colon physiology suggests that proper medical management may prevent the diverticulosis from extending, and that the diverticulitis in most cases can be controlled. Coexistence of carcinoma with diverticular disease must be kept in mind at all times. Complications of diverticulitis demand surgery. To keep mortality low, staged procedures are necessary, although the morbidtiy is high; safety and not time is the factor. One stage resection to prevent complications before they occur is ideal in selected cases. •

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Abstract of Minutes, House of Delegates of Nevada State Medical Association
63rd Annual Meeting—Las Vegas, Nevada
November 28-December 1, 1966

Two meetings of the House of Delegates were held at the 63rd Annual Meeting, with President Joseph M. George, Jr., presiding as Speaker.

FIRST MEETING

Sunday, November 27, 1966

The House was called to order at 2:00 p.m. in the Normandy Room at the Riviera Hotel, Las Vegas. Following the opening ceremonies and invocation, presentation was made of the A. H. Robins award to the Nevada Physician of the Year, Doctor Roland Stahr. The plaque was accepted by William M. Tappan, M.D., for Doctor Stahr, who was unable to be present.

Mrs. Noah Smernoff, President of the Woman's Auxiliary to NSMA, presented her report and introduced Mrs. Asher Yaguda, President of the AMA Woman's Auxiliary.

Reports of the officers and committee chairmen were received and referred to appropriate reference committees. Following the announcement of reference committee meetings, the Speaker adjourned the House until 1:00 p.m., Wednesday, November 30, 1966.

SECOND MEETING

Wednesday, November 30, 1966

President Joseph George, Jr., called the House of Delegates to order at 1:00 p.m. in the Normandy Room of the Riviera Hotel, Las Vegas, Nevada. Seventeen members responded to the roll call by Doctor Salvadorini, constituting a quorum.

Mr. D. A. Swanson of Parke, Davis & Company presented the Association with a set of framed prints depicting the "History of Medicine," commemorating the company's Centennial Year. Dr. George accepted the gift for the Association.

Special citation of merit for distinguished service to the NSMA were then presented to Kirk V. Cammack, Theodore Jacobs, and Hugh C. Follmer, in recognition of their dedicated efforts as General Chairman, Scientific Program Chairman, and TV Chairman, respectively, for this joint meeting of the Association with the AMA Clinical Session.

Dr. George read a letter from Dr. Wesley W. Hall, Chairman of the AMA Board of Trustees, expressing his regret at his inability to be present at the meeting. Actions taken by the House follow:

Reference Committee on Nominations, Time and Place of Future Meetings

The House approved a motion regarding the recommendation of this committee that future meetings of the Association be set up three years in advance, and that the 1967 meeting be held at the Sahara-Tahoe Hotel, hosted by the Lahontan Basin Medical Society, November 7-11, 1967; the 1968 meeting be in Las Vegas, hosted by the Clark County Medical Society; in 1969 in Ely, with White Pine County as host society; and in 1970 in Reno, under the auspices of the Washoe County Medical Society. The House also approved a motion by Dr. Read that the NSMA issue an invitation to the AMA to hold its June 1971 meeting in Las Vegas.

President Joseph M. George, Jr., presents plaques of appreciation from the NSMA to (left to right) Doctors Theodore Jacobs, Kirk V. Cammack, and Hugh C. Follmer.

The House approved unanimously the report of the **Nomination Committee**, as follows:

President	**William M. Tappan, M.D.**
President-elect	**Richard A. Petty, M.D.**
Secretary-Treasurer	**V. A. Salvadorini, M.D.**
AMA Delegate	**Leslie A. Moren, M.D.**
Alternate Delegate	**Thomas S. White, M.D.**

Constitution and By-Laws Committee

Approved unanimously the following addition to the Constitution under Article IV, Section 3, Life Members:

> "Life membership may be revoked by action of the House of Delegates or the Executive Committee if the life member returns to active practice of medicine." (Requirement of two-thirds vote of members present; notice must be sent officially to each component society at least two months in advance of the 1967 meeting where final action will be taken.)

Approved an amendment to the By-Laws, Chapter 3, Section 1, paragraph (e), the last sentence to read:

> "A delegate whose credentials have been accepted by The Reference Committee on Credentials, and whose name has been placed on the roll of the House, shall remain a delegate until adjournment of that day's session."

Reports of Officers; Ways and Means

Approved adoption of the reports of the Secretary-Treasurer, the President's Annual Report, Finance and Building Committee, and the Obituary Committee. The members of the House then rose for a moment of silence in memory of departed members Glen C. Davis, Lawrence Parsons, J. Carroll Russell, Hale B. Slavin, and Karl H. Ziegenhorn.

Approved the following memorial resolution honoring Mrs. Dorothy Launders of Las Vegas:

> In memoriam to Mrs. Dorothy Launders. Whereas, Mrs. Dorothy Launders labored long and fruitfully for the benefit of mankind through many medical and social agencies, and as executive secretary of the Nevada Tuberculosis and Health Association of Clark County, County of Clark Mental Health Association, and Nevada Mental Health Association, and Clark County Chapter of the American Cancer Society, and whereas Mrs. Launders also gave untiringly of her talents and energies as trustee of the Southern Nevada Memorial Hospital, as a member of the State Mental Health Board, and in various other capacities for the American Red Cross and other community betterment programs, now, therefore, be it resolved, that the Nevada State Medical Association House of Delegates, in session at Las Vegas, Nevada, on November 30, 1966, wishes to recognize the outstanding achievements of Mrs. Dorothy Launders and to posthumously honor the memory of this most exemplary citizen of Nevada, and in so doing, expresses its deepest sympathy to her husband and family."

Approved the suggestion by this committee that the NSMA send a letter of appreciation to Dr. Wesley W. Hall for his excellent record and fine service as Chairman of the AMA Board of Trustees.

Approved sending a letter of appreciation to the Clark County Medical Society for its efficient help on program and arrangements for the AMA Convention; also, that letters of appreciation be sent to the Riviera Hotel for the excellent facilities provided and the exceptional courtesy of its employees, to the Las Vegas Journal and the Las Vegas Sun for their comprehensive and honest coverage of the AMA Convention, and to the Sunrise Hospital in Las Vegas for their excellent cooperation for the closed circuit TV program.

Approved a motion by Dr. Arthur Scott that before the second story addition is built to the Association headquarters, the new State administration be contacted to ascertain their position with regard to NSMA administering the insurance programs under Title XIX which will come up during the next session of the NSMA.

Legislative; Public and Professional Relations Committees

Approved acceptance of the following reports as contained in the Delegates' Handbooks: Legislative Committee, Crippled Children's Advisory Committee, Blood Bank Committee, Public Safety Committee, with a special commendation for Dr. V. A. Salvadorini and Mr. Nelson Neff for their work with the State Legislature.

Approved acceptance of the report of the Mental Health Council, with the recommendation that prior to the next meeting of the Nevada State Legislature, the Mental Health Council review all proposed legislation and make recommendations to the Nevada State Medical Association Legislative Committee and Executive Committee about the proposals being made by the Nevada Department of Health and Welfare.

Approved the report of the Committee on Aging, which recommends that the law which prohibits a physician from receiving a fee for taking care of indigent patients when care is given in county hospitals be eliminated, so that Title XIX can be implemented as planned.

Gave a standing vote of thanks to the Max C. Fleischmann Foundation for its repeated demonstrated interest in medical education, and recommended that the Fleischmann Foundation be notified of this action.

Approved the recommendation that the Professional Education Committee be designated as the liaison committee to work with WICHE in its forthcoming survey of medical facilities and needs in Nevada, as made possible through Title IX, federal grant (heart disease, cancer, and stroke), and should report such information to the NSMA; also, that this committee initiate and pursue the multilateral conversations necessary to explore the feasibility of a medical school within the State.

Approved acceptance of the Historian's report, with the recommendation that the questionnaire prepared by the Historian be filled out by applicants for membership in the component county medical societies, as a requirement for membership, and such questionnaires then be filed at the NSMA headquarters and kept available to the Historian.

Report on Miscellaneous Business

Approved the continuation of Nevada Physicians Service, Inc., and Nevada Medical Care, Inc., recommending that replacements be appointed for two of the officers of the latter corporation who have left the State, namely Lorne M. Phillips, M.D., and John M. Moore, M.D.

Approved reports of the Maternal Health Committee, Liaison to Woman's Auxiliary, and Public Health Advisory Committee, and officially extended a welcome to Dr. Edward Dehne, State Health Officer.

Approved the report of the Tuberculosis Committee, and applauded the extension of the Tuberculosis program as outlined in the report.

Approved the recommendation that through the Bureau of Preventive Medical Services, Maternal and Child Health, and Crippled Children, in the State Division of Public Health, free measles vaccine be provided on the written request of any physician either to the physician, or for administration free of charge to his office or through a clinic mechanism.

Approved the report of the Visiting Nurse Service, recognizing the desirability of state-wide services, but advising caution lest the program may advance without adequate medical direction.

Approved the In-Service Training Programs offered by the Division of Health and encouraged their expansion.

Adopted the report on Health Mobilization Programs, with the recommendation that the mobilization of package disaster hospitals properly belongs on the agenda of the Public Health Advisory Committee, rather than Civil Defense.

Approved commendation of the efforts of the Bureau of Preventive Medical Services in the field of undergraduate education.

Approved the recommendation that at least one Public Health consultant in physical therapy be available in both Northern and Southern Nevada.

Approved the recommendation that the Public Health Advisory Committee become informed and concerned in matters relating to air pollution, water pollution, and radiation hazards.

Approved adoption of the report of the Committee on Alcoholism, including opposition to an increased State tax on alcoholic beverages for the purpose of increasing the staff of the Nevada Alcohol Division; and the recommendation that alcoholics should have a personal financial responsibility for their treatment.

Approved the Insurance Committee report; reaffirmed the stand of the Insurance and Executive Committees that hospital-surgical privileges should be determined by the Credentials Committee of an accredited hospital, and not by the Nevada Industrial Commission or a subdivision thereof; accepted Doctor Arthur Scott's report of ODMC negotiations on the expanded programs for outpatient services for dependents and services to retired personnel and their dependents; recommended that the Insurance Committee conduct a program to forestall any tendency on the part of physicians to increase their fees under PL 89-97, as persistent abuse could result in a fixed unit value for Nevada; recommended that the Insurance Committee inform the membership of the problems and difficulties interrelating PAM to PL 89-97; urged the membership to bill their usual and customary fees; and approved the request of the Insurance Committee that it be continued in intact form insofar as is possible.

Endorsed the desirability of routine labeling of prescription drugs, providing the physician retains the option to indicate, in specific instances, that no labeling be done.

Gave a special vote of thanks to Dr. Arthur E. Scott for his efforts in behalf of the physicians of Nevada with regard to Military Dependents Medical Care, and to Dr. Harry J. McKinnon, Jr., for his work on the Insurance Committee.

Ratified the following governing board for the Nevada Blue Shield Plan:

President: Harry J. McKinnon, Jr., M.D.
Vice-President: Charles D. Lanning, M.D.
Secretary-Treasurer: Mr. Jordan Crouch
Executive Director: Mr. Nelson B. Neff
MEMBERS OF THE BOARD:
Mr. Arthur Smith, President of the Bank of Nevada, Las Vegas
Mr. John Morman, of the Nevada AFL-CIO
Mr. Robert McAdam, Bell Telephone Company
Richard D. Grundy, M.D., Carson City
John W. Callister, M.D., Reno
William M. Tappan, M.D., Reno
Arthur E. Scott, M.D., Reno
John M. Read, M.D., Elko
Thomas S. White, M.D., Boulder City

The House of Delegates then recessed, and Dr. John M. Read, President of Nevada Medical Care, Inc., reported on this corporation, and the following officers were elected: John M. Read, President; Jack S. Hirsh, First Vice President; Donald D. Wicker, Second Vice President; Joseph M. George, Jr., Secretary-Treasurer, and V. E. Elliott, Member-at-Large.

Dr. Arthur Scott then convened the meeting of Nevada Physicians Service, and the following officers were elected for the coming year: Arthur E. Scott, President; Richard C. Sheretz, Vice President; William M. Tappan, Secretary-Treasurer, with Doctors Joseph M. George, Jr., Richard D. Grundy, Charles D. Lanning, Reed J. Anderson, John M. Read, and Peter Rowe elected as members of the Board.

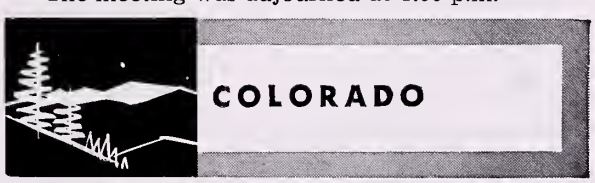
Dr. George paid tribute to the Woman's Auxiliary for their work during the convention, particularly in putting on an excellent program for the visiting ladies.

NSMA President William M. Tappan, M.D., left, accepts the gavel of office from outgoing President Joseph M. George, Jr., M.D.

After Dr. George's remarks of appreciation to the House, he installed Dr. William M. Tappan in the office of President for the forthcoming year, and Dr. Tappan presented Dr. George with a personal gavel, appropriately inscribed, as a memento of his term of office, and a plaque of appreciation.

Dr. Tappan spoke briefly on his hopes for the Association during the coming year, and urged better communication between all members of the Association, stating that while everyone is tremendously concerned about economics and social problems, the primary interest for the NSMA is in doing everything possible to promote the highest quality of medical care for patients in Nevada.

The meeting was adjourned at 4:00 p.m.



Distinguished Service Awards

Plaques, inscribed "Presented for distinguished and outstanding service to the profession and the community," were presented to Dr. Roger Howlett, first President of the Clear Creek Valley Medical Society; Dr. George Bailey, Dr. Freeman Fowler, Dr. Thomas Thorn, Dr. Galen Garvin, Dr. Harold VanDerSchouw, Dr. Stephen Kallay, Dr. Morgan Durham, and Drs. Mary and Douglas Collier.

UTAH

USMA Briefs

Dr. Reed M. Broadbent, Logan surgeon, has been elected President-elect of the Utah Chapter of the American College of Surgeons. He will succeed Dr. Russell M. Nelson to the presidency next year.

Dr. Nelson, Salt Lake City cardiovascular surgeon, became president at the recent meeting of the group. He succeeds Dr. L. Weston Oakes, Provo ophthalmologist.

In addition to the above officers, Dr. Preston R. Cutler, Salt Lake City thoracic surgeon, was elected secretary-treasurer, and Dr. John A. Dixon, Ogden surgeon, was elected a councilor. Both were elected for three-year terms.

* * * *

Dr. George Fister, Ogden urologist and past-president of the American Medical Association, was recently awarded life membership in the Greater Ogden Chamber of Commerce. This honor was bestowed upon him for his countless hours of volunteer service to his community.

* * * *

Dr. Preston J. Burnham, Salt Lake City surgeon, has been elected president of the Utah Chapter, National Rehabilitation Association.

MEETINGS

SECOND ANNUAL CONFERENCE ON CARDIOVASCULAR DISEASES
March 23-25, 1967
Nugget Convention Center, Sparks, Nevada

The following subjects will be presented by outstanding guest speakers:

Congenital Heart Disease
Cardiac Pacemakers
Pulmonary Circulation
Arrythmias
Workshop on Resuscitation
Cardiac Monitoring and Coronary Intensive Care
Valvular Disease in the Adult
Valve and Arterial Prostheses
Electrophysiology of the Heart
Beta Adrenergic Blockade
Exercise Physiology

Sessions open to Physicians, Nurses, Veterinarians, and Technicians.

* * * *

INTERMOUNTAIN PEDIATRIC SOCIETY
Las Vegas, Nevada
April 24-26, 1967

SECOND SPRING TRAUMA SEMINAR
April 23-26, 1967
Caesars Palace, Las Vegas, Nevada

The theme of this seminar, which is sponsored by the Las Vegas Committee on Trauma of the American College of Surgeons, is **Trauma Care From the Accident Back to the Job.** The Spring Trauma Seminar is held biennially alternating with a Spring Cancer Seminar. A program of wide interest to all who care for trauma victims has been planned.

For further information concerning this meeting, contact John W. Batdorf, M.D., 3196 Maryland Parkway, Las Vegas, Nevada 89109.

* * * *

NINTH ANNUAL CANCER SEMINAR
RENO, NEVADA
May 10-12, 1967
Sparks Nugget Convention Center

Sponsored by the American Cancer Society, Nevada Division, Inc., and co-sponsored by the Nevada State Department of Health and the Reno Cancer Center.

May 10—dental profession program
May 10—nursing profession program
May 11 and 12—medical program

Internationally known faculty on the subjects of pathology, diagnosis and treatment of cancer of the colon and the lung.

Activities for wives.

Co-Chairmen:

David L. Roberts, M.D., Reno, Nevada, and Robert K. Myles, M.D., Reno, Nevada.

For information or reservations write to The American Cancer Society, P.O. Box 7432, Reno, Nevada.

Enjoy sophisticated entertainment in a Western city.

* * * *

PEDIATRICS

RECENT ADVANCES IN PEDIATRICS, a post-graduate course, will be held at the University of California San Francisco Medical Center from May 18-20, 1967, under the chairmanship of Dr. Melvin M. Grumbach. Members of the Department of Pediatrics will describe advances in the study of cardiopulmonary disease in the fetus and newborn, renal and electrolyte disorders, endocrine aberrations, human chromosomal abnormalities and infectious diseases. In addition, registrants may select and participate in a series of clinical seminars in these fields. Chairmen for the daily sections will include Drs. Malcolm Holliday, Abraham Rudolph and William H. Tooley. Further information may be obtained by writing Continuing Education in Medicine, University of California San Francisco Medical Center, San Francisco, California 94122.

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AMERICAN ACADEMY OF PEDIATRICS
ANNUAL SPRING SESSION
April 3-5, 1967
San Francisco Hilton Hotel
San Francisco, California

CHILDREN'S HOSPITAL SPRING CLINICS

CHILDREN'S HOSPITAL, DENVER, is holding its Spring Clinics at Vail, Colorado, June 26-28, 1967. Guest Faculty: Sydney Gellis, M.D., Tufts University; Mary Ellen Avery, M.D., Johns Hopkins University; Robert Kugel, M.D., University of Nebraska; James K. Weaver, M.D., University of New Mexico; William Daeschner, M.D., University of Texas; Hugh Thompson, M.D., Tucson, District Chairman of Region VIII of the Academy of Pediatrics. Morning seminars and lectures. Afternoons of leisure in the Rocky Mountains. Advances in Pediatrics and The Path Ahead in Pediatric Practice will be the guidelines for the clinics.

Fee: $40.00. Write: Joseph Butterfield, M.D., Children's Hospital, Nineteenth Avenue at Downing, Denver, Colorado 80218.

* * * *

HAHNEMANN MEDICAL COLLEGE AND HOSPITAL
April 10-12, 1967
18th Hahnemann Symposium
EPITHELIAL-MESENCHYMAL INTERACTIONS

Note: For further information, please contact Raul Fleischmajer, M.D., Director.

* * * *

American College of Physicians Postgraduate Courses, 1967

PHYSIOLOGICAL ASPECTS OF CARDIOPULMONARY DISEASE
March 13-17
Yale University-New Haven Medical Center
New Haven, Connecticut

FUNDAMENTAL CONCEPTS OF GASTROENTEROLOGY
March 20-24
University of Michigan Medical Center
Ann Arbor, Michigan

PSYCHIATRY FOR THE INTERNIST
March 27-31
Wayne State University School of Medicine,
(Lafayette Clinic) Detroit, Michigan

CLINICAL AUSCULTATION OF THE HEART
May 8-12
Georgetown University School of Medicine and
Georgetown University Hospital
Washington, D. C.

RECENT ADVANCES IN CLINICAL ENDOCRINOLOGY
May 15-19
University of Washington
Seattle, Washington

Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

A grant of $9,000 has been made by the National Dairy Council of Chicago to the Child Research Council at the University of Colorado Medical Center for a scientific study of the nutrition of babies during their first two years of life.

Dr. Robert W. McCammon, director of the Child Research Council, and Miss Virginia Beal, research nutritionist, will analyze the relationship of nutritional intake of babies to their physical growth, body tissue composition, serum proteins, serum cholesterol, hemoglobin levels and gastrointestinal disturbances. He will utilize data collected by the CRC over the past 20 years in its unique life-cycle studies of human development and new information being collected from children presently enrolled in the project. Over a period of 35 years the CRC has been collecting medical and scientific information on the entire life-cycle of individual human beings, beginning at their birth or before.

* * * *

Dr. John J. Conger, vice president for medical affairs of the University of Colorado and dean of its School of Medicine, has been appointed by President Johnson to the 17-man National Motor Vehicle Safety Advisory Council. The council, which held its first meeting in Washington on Jan. 19, will advise Secretary of Transportation Alan S. Boyd and the newly created National Highway Safety Agency on development of safety standards for vehicles and action programs to reduce the sharply climbing highway accident toll.

Dr. Conger was chairman of the research subcommittee of the President's Committee for Traffic Safety, 1960-63, and last year was appointed to the Advisory Committee on Traffic Safety to the Secretary of the Department of Health, Education and Welfare. He is a member of the Committee on Road User Characteristics, Highway Research Board, National Research Council, and of the editorial board of the Traffic Safety Research Review, published by the National Safety Council.

* * * *

Postgraduate medical education at the University of Colorado Medical Center during 1966 attracted 4,877 registrants representing 48 of the 50 states, Puerto Rico, Canada and eight other foreign countries and contributed in excess of $5.1 million to the Colorado economy.

More than half of the physicians and paramedical professions who attended the 27 short courses were Coloradans, according to the annual report of Dr. C. Wesley Eisele, associate dean of the CU School of Medicine in charge of postgraduate education and director of the year-round program of intensive refresher courses.

* * * *

A grant of $60,990 to the University of Colorado School of Nursing has been received from the U. S. Children's Bureau to support continuing education services in the field of maternal and child nursing. One of the major objectives of the state-wide educational effort will be a further reduction in Colorado's infant mortality rate. During 1965, the last year for which statistics are available, the infant mortality rate (deaths during the first year of life) in Colorado was 24.3 per 1,000 live births, compared with a national rate of 24.8. This was the first time Colorado's infant death rate had dropped below the national rate.

The Children's Bureau grant will support the first segment of a three-year program of continuing education for practicing nurses to permit them to refresh their knowledge and resharpen and upgrade their professional skills. The federal funds will assist in conducting a series of short refresher courses, workshops and institutes both at the CU Medical Center in Denver and, in cooperation with local units of the Colorado Nurses' Association, at other cities in the state. The grant also will provide stipends for a limited number of tuition-free traineeships at some of the courses.

* * * *

A U. S. Public Health Service grant of $48,097 to the University of Colorado School of Nursing has been announced for the first year of a new five-year program of graduate education for "nurse scientists" working toward doctorates in selected health-related fields. The program is directed toward the preparation of the scholars, researchers and theoreticians of nursing needed for its continued advancement as a scientific profession. Over the next five years the program is expected to involve $185,203 of federal grants.

The new program is being placed in effect immediately and it is expected that the first four nurse-scientist candidates for Ph.D. degrees in anthropology, psychology and sociology will be admitted next fall. A doctoral program in physiology will be added later. Applicants needing assistance will be eligible for renewable annual stipends of $3.600 under the grant from the Division of Nursing of the USPHS.

* * * *

Six distinguished American scientists will present an advanced course in microbiology covering "Proteins: Evolution and Function" at the University of Colorado Medical Center this spring.

The course will consist of a series of three lectures by each of the visiting scientists, according to Dr. Lloyd M. Kozloff, professor and chairman of the Department of Microbiology in the CU School of Medicine.

Dr. Kozloff said qualified CU students may take the course for credit, and it is open without fee to all interested physicians, scientists, science educators, and researchers.

OBITUARIES

Colorado

Dr. William Wiley Jones died unexpectedly at his home on Friday the 13th of January, 1967. He was 83 years old.

He was born in Denver on November 24, 1884. He was educated in the Denver Public Schools and at the University of Colorado and was awarded an A.B. Degree in 1905 and an M.D. Degree in 1909. He served an internship and later a residency in pediatrics at the St. Joseph's Hospital. He was licensed in Colorado in 1909, and became a member of the Denver Medical Society, the Colorado Medical Society, and the American Medical Association in 1911. He was one of the first men in Denver to specialize in the field of pediatrics.

He interrupted his practice of pediatrics in Denver to serve in the U. S. Army Medical Corps from 1917-1921 with the rank of Captain. Following his discharge from the Army he resumed his practice in Denver. In 1946 he was appointed Chairman of the Annual Clinical Pathological Conference at Children's Hospital and continued to serve as Chairman until the time of his death. Throughout his entire professional life he was active in medical, welfare, and civic affairs.

Dr. Jones served on the volunteer faculty of the University of Colorado for a number of years and at the time of his death was an Emeritus Associate Professor of Pediatrics. He was elected President of the Denver Medical Society in 1950 and served as a member of their Board of Directors until 1956, when he was Chairman of the Board.

For a good many years Dr. Jones was a Director of the Department of Pediatrics at Denver General Hospital and also Medical Director at the Colorado State Home for Dependent Children, where he was known over a period of many years by hundreds of fatherless children as "Uncle Wiley." He also served as Chief of Staff at the Denver Orphans Home and as Director of the Municipal Tuberculosis Dispensary in the Children's Division.

Dr. Jones was active in the building and development of the Denver Medical Society library, and after the library was built, served on various committees of that institution for a number of years. He continued to be an active patron and devoted friend of the Denver Medical Library until the time of his death.

Dr. Jones was awarded the coveted Certificate of Service, the highest award ever granted by the Colorado Medical Society, a few years before his death.

He was a lifelong member of the Episcopal Church, a charter member of the Colorado University Chapter of Phi Rho Sigma established in 1909, and a member of the Denver Mile High Club.

He is survived by a niece, Mrs. S. Dwight Parker of Long Meadow, Massachusetts; a grandniece, Mrs. J. Richard Prior of Irvington, New York; a grandnephew, Stephen D. Parker, Jr., of New Haven, Connecticut, and one great-grandnephew.

Utah

William Leroy Smith, M.D., Salt Lake City eye, ear, nose and throat specialist, died on January 21, 1967, of cardiovascular failure.

Dr. Smith was born in Logan, Utah, August 25, 1891. He attended the University of Chicago and the Rush Medical School, Chicago, from which he received his M.D. degree in 1916. He was in the private practice of medicine and surgery until 1924 when he attended a postgraduate course in St. Louis, Missouri, in the specialty field of eye, ear, nose and throat. In 1925 he spent a year in Vienna, Austria, doing work in the same specialty. He returned to Salt Lake City in 1926 and began private practice in this specialty.

He was a member of the Utah State Medical Association, Salt Lake County Medical Society, American Medical Association, American Academy of Ophthalmology and Otolaryngology and the Pacific Coast Oto-Ophthalmological Society. In 1961 at Palm Springs, California, he was a special guest of honor of the latter organization in recognition of his contributions to the health and welfare of mankind.

He is survived by his widow, four children and 10 grandchildren.

Montana

Ernest D. Hitchcock, M.D., Great Falls, died in a Great Falls Hospital on January 22, 1967, following a lengthy illness. Dr. Hitchcock was born in Pendleton, Oregon, on July 31, 1884. He received his M.D. degree from Cooper Medical College and completed his internship at San Leandro, California. He practiced medicine in Klamath Falls, Oregon, for three years and later moved to Portland where he practiced until he was called to active duty with the U. S. Navy during World War I. After his discharge, he accepted a position with the Montana State Board of Health and in 1922 became associated with the Great Falls Clinic in its Radiology Department. Doctor Hitchcock was very active on a number of committees of the Montana Medical Association and served as its president during 1942-43. He was also a member of the American Medical Association and the American College of Physicians. He served as governor of the college for the Montana-Wyoming region for several years. Doctor Hitchcock was also a member of the Montana State Board of Health and of the Cascade County Board of Health.

Norman A. Franken, M.D., Havre, died in a Havre hospital on January 4, 1967. Dr. Franken was born in Rockford, Illinois, on June 13, 1910. He received his B.S. degree from Marquette University in 1935 and his M.D. degree from the University of Wisconsin Medical School in 1941. He was licensed to practice in Montana during October, 1951, and shortly thereafter engaged in the practice of medicine and surgery in Havre, Montana. Doctor Franken was a member of the Cancer Committee of this Association for several years and from 1960 to 1962 served as its chairman. He also served as president of the Montana Division of the American Cancer Society.

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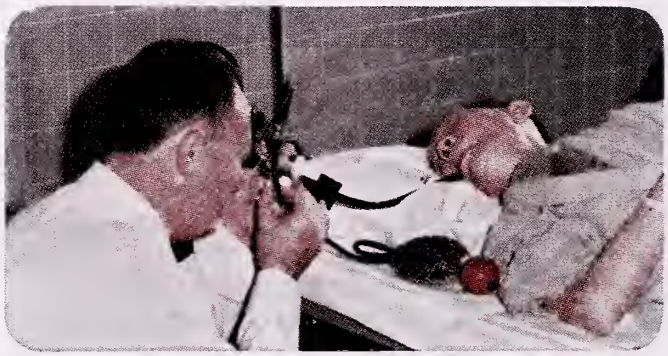
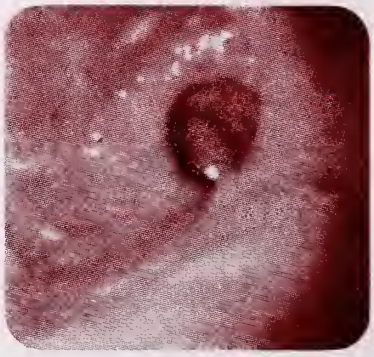
NEW EVIDENCE:

Pro-Banthīne® (propantheline bromide) gives positive, selective benefits in gastrointestinal disorders.



Intragastric photograph of pyloric region showing complete relaxation of pyloric sphincter with 6 mg. of Pro-Banthīne intravenously.



AN IMPORTANT PROBLEM in managing gastrointestinal disorders has been the choice of an anticholinergic agent which will act positively and selectively on the gastrointestinal tract without extensive secondary effects.

Recent direct observations with the cinefibergastroscope and intragastric photography[1] visually confirm previous evidence that Pro-Banthīne does, indeed, possess such selective activity.

Barowsky and his associates demonstrated that a minimal dose of 6 to 8 mg. of Pro-Banthīne intravenously produced complete relaxation of gastric activity. Secondary effects were not significant.

By contrast, it required 0.8 mg. or double the usual dose of atropine intravenously to achieve similar gastric relaxation. Side effects of this dosage of the belladonna alkaloid were pronounced. Ventricular rates were as high as 150 per minute.

For positive, selective anticholinergic benefits Pro-Banthīne is indicated in patients with peptic ulcer, gastritis, irritable colon and other forms of gastrointestinal hypermotility.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthīne (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Contraindications: In glaucoma or severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in the elderly male with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug.

Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

1. Barowsky, H.; Greene, L.; Bennett, R., and Buganza, G.: The Effect of Anticholinergic Drugs on Gastric Motility and Pyloric Function, Scientific Exhibit, Annual Convention of the American Medical Association, Chicago, Illinois, June 26-30, 1966.

SEARLE *Research in the Service of Medicine*

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Bone Tumors: By David C. Dahlin. 2d ed. Springfield, Ill., 1967, Thomas. 285 p. Price: $16.00.

The Cervical Syndrome: By Ruth Jackson. 3d ed. Springfield, Ill., 1966, Thomas. 333 p. Price: $10.50.

Communication Training in Childhood with Brain Damage: Edited by Merlin J. Mecham. Springfield, Ill., 1966, Thomas. 392 p. Price: $11.75.

Contributions to Psycho-analysis, 1921-1945. By Melanie Klein. London, 1948, Hogarth. 416 p. Price: $5.00.

Disorders of the Respiratory Tract in Children: Edited by Edwin L. Kendig. Phila., 1967, Saunders. 834 p. Price: $26.00.

Fundamentals of Hyperbaric Medicine: National Research Council. Washington, 1966, National Academy of Sciences. 178 p. Price: $6.00.

Hand Surgery: Edited by J. Edward Flynn. Balt., 1966, Williams & Wilkins. 1095 p. Price: $38.50.

New Concepts in Gynecological Oncology: Edited by George C. Lewis. Phila., 1966, Davis. 438 p. Price: $20.00.

Prevention of Ischemic Heart Disease: Edited by Wilhelm Raab. Springfield, Ill., 1966, Thomas. 466 p. Price: $25.50.

Transurethral Prostatic Surgery: By Kyril B. Conger. Balt., 1963, Williams & Wilkins. 140 p. Price: $9.00.

The University and Community Health Services: By LeRoy E. Burney. N. Y., 1966, American Public Health Assoc. 34 p. Price: Gift.

Book Reviews

Radiology in World War II—U. S. Army Medical Department: Edited by Arnold Lorentz Ahnfeldt, Kenneth D. A. Allen and others. Washington, D. C., 1966. U. S. Govt. Print. Off. 1087 pages. Price: $8.50.

The above mentioned publication which I am going to attempt to briefly review for you would more properly be described as a Tome which, according to Webster in one definition is: a book, especially a "large or scholarly one." To imply that I have read in detail each page of this 935-page publication would not be proper as this would be impossible for me to have done. The Editor-in-Chief, Colonel Ahnfeldt, and more particularly for us the Editor, Kenneth D. A. Allen, M.D., and his helpers have done a magnificent job of putting together a most complex book covering a wealth of individual and personal as well as group experiences. Some 31 different authors contributed to the wealth of information available in this publication. For purposes of classification, as well as ease of reading, it is divided into seven different and distinct parts ending with "Radiology and the Atomic Bomb." This reviewer has in his possession a textbook published covering the use of x-rays in the Philippines in the Spanish-American War. Therefore, I found it particularly interesting to compare that text with this one covering Radiology in World War II. I would urge anyone using this book to read the Foreword and Preface as it lays a most interesting groundwork by which to enjoy the very well done contents. The progress from World War I to World War II and the use of the Science and Art of Radiology was tremendous. Should we be unfortunate enough to enter another such tragic war we can only hope we will be even better prepared at that time. In the meantime one of the few benefits, if any, that may come from the so-called brushfire wars is that we may continue to develop our skills in the medical and paramedical fields, so that we would be adequately prepared should such an unfortunate thing occur again.

The book is excellently indexed and you can find comments on everything from Panzer patrols, sand fly fever, sand storms in Egypt to the skip effects of bombing in Nagasaki in this volume. Of necessity the book has been written largely from the personal experience of the authors and their associates. It could hardly be otherwise. One can detect throughout the book the great pride that these many people took in their work and the contribution they could make to bring this war to a favorable end.

I cannot pass without paying tribute as many others did to our wonderful enlisted technicians who with very brief and minimal training, although adequate, turned out such a splendid job under most diverse and sometimes most difficult circumstances. Their lot was often difficult but as you can see throughout the book they were a dedicated group who in spite of many adversities turned in an excellent piece of work. This dedication to a job well done by officers and enlisted men will forgive the sometimes over-use of first person in the writing as it is due more to enthusiasm and dedication than to any selfish motive. All phases of the use of radiology are covered from the smallest portable surgical hospital to the largest general hospital.

The last chapter by Dr. Stafford Warren (one of my professors) will be found most interesting to anyone interested in nuclear radiation.

There are many fine illustrations which are well indexed and described. I would urge anyone coming across this book to not be frightened off by its size but to go through it as I am sure you will find much of interest and equally as much of value. It is fortunate that so many people in so many busy activities could also have had such a good sense of history as to preserve these records for us to see at this later and more quiet day.

Vernon L. Bolton, M.D.

The Artful Practice of Medicine: By William B. C. Van Auken. Springfield, Ill., 1966, Thomas. 115 pages. Price: $6.50.

This terse book opens with the assumption that the acquisition of a science does not automatically enable the recipient to use it artfully. The author then proceeds to draw from his own experience in discussing the artful practice of medicine.

The book attempts to swing the pendulum from the "case" to the "person." The sympathetic regard for personality and for a humanistic response is emphasized.

This book by Dr. Van Auken of Baylor University will fill a void in the education of the young doctor, who is finishing medical school or a residency program. Here the doctor will find specific answers to many problems and, concurrently, a philosophy which will provide answers to questions not specifically discussed.

The older physician undoubtedly has handled many of the problems discussed herewith, with variable results. He may well find a new approach to old problems.

This book is highly recommended to help the doctor dispel the gathering clouds which cast doubt and confusion about his public image.

Albert F. Petrone, M.D.

Appraisal of Current Concepts in Anesthesiology: Edited by John Adriani. v. 3. St. Louis, 1966, Mosby. 522 p. Price: $10.85.

The residents and staff of Dr. John Adriani's Department of Anesthesia were assigned these timely topics on various aspects of the field of anesthesia; their reports cover the necessary history, the pertinent basic science facts, the related textbook dogma, and the recent medical journal consensus.

Each topic is brief, written in clinical language, and reflects the current concept in anesthesiology.

This material will serve as a reminder of the need for continuing refreshing of recent knowledge . . . it will stimulate every physician who was a graduate more than two years ago!

Charles B. McCrory, M.D.

Diabetes for Diabetics: By George F. Schmitt, M.D., F.A.C.P. Diabetes Press of America, Inc., 30 S.E. 8th St., Miami, Florida 33131. ($5.95 prepaid.)*

The latest book published for diabetics is *Diabetes for Diabetics* by an outstanding, practicing diabetologist, George F. Schmitt, M.D.

Realizing the need for educating the millions of diabetics with basic information about their disorder, the author has written this completely different, practical guide for diabetics. Dr. Schmitt clearly explains the cause and treatment of diabetes, as well as its complications and problems, in simple terms which laymen can understand.

A large section on diet, including the most complete food exchange lists ever published, contains information on purchase, preparation and selection of foods.

Insulin and oral antidiabetic drugs are discussed in detail. A chapter on urine testing for sugar and acetone shows step-by-step procedures for these tests, and explains why urine testing is so important for good control.

Many problems of daily living such as marriage, pregnancy, employment and insurance are discussed. In addition Dr. Schmitt stresses the importance of good hygiene, care of the feet, eyes, skin, hands and teeth.

In addition to over two hundred colored photographs the diabetic will find most helpful the unique feature of self-testing lists of questions at the end of each chapter.

*Reprinted from "Diabetes in the News," July-August-September 1966 Edition.

NEVADA STATE MEDICAL ASSOCIATION
64th ANNUAL MEETING
November 7-11, 1967
Sahara-Tahoe Hotel
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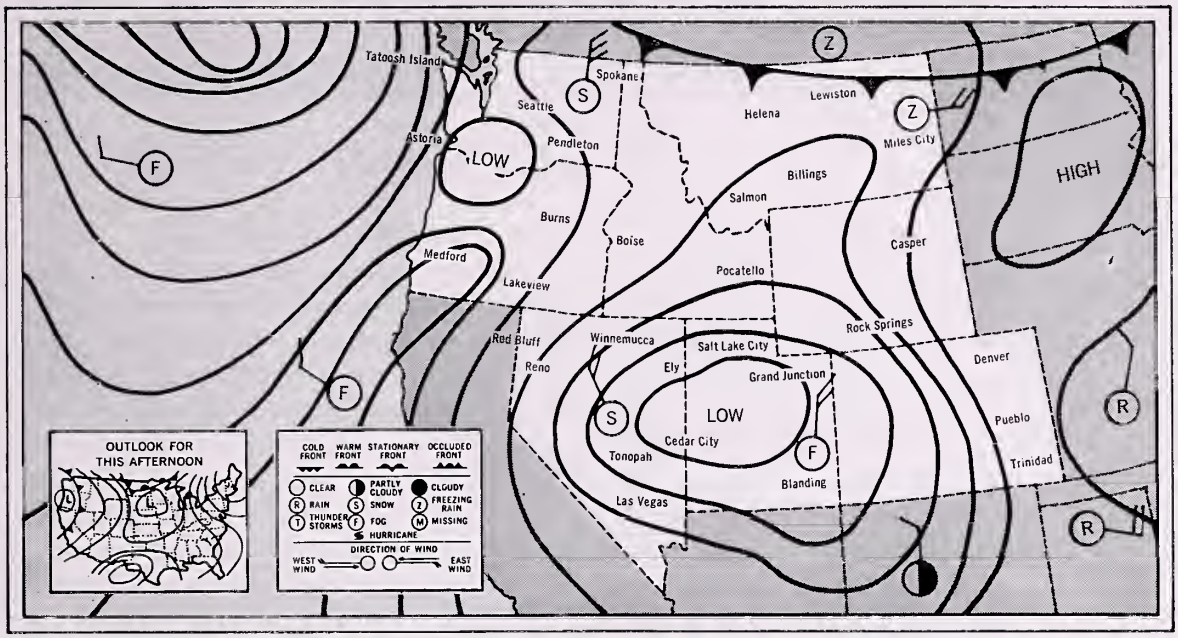
Dust Storms, High Winds, Snow Storms and Colder Followed by Cough, Stuffed and Runny Noses and Aches and Pains.



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Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. *Side effects:* Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. *Precautions:* The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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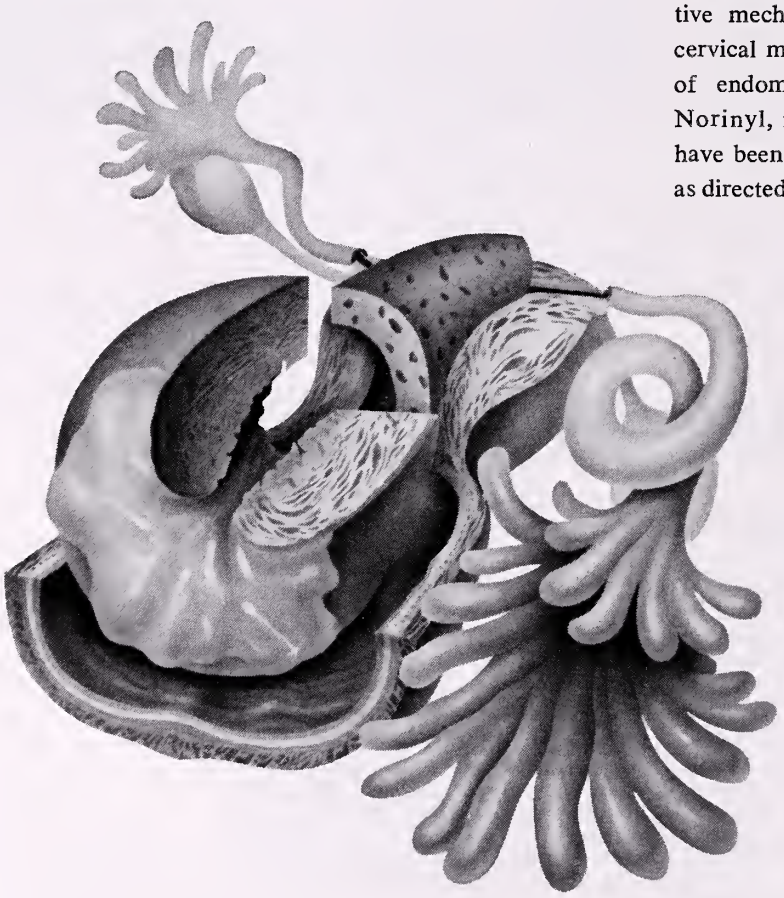

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Norinyl provides multiple action for maximum assurance of success. It does not depend on ovulation inhibition alone for contraceptive effectiveness. The mechanism of action of combined hormonal therapy results in ovulation inhibition reinforced by other protective mechanisms, including a hostile cervical mucus[1-13] and an acceleration of endometrial changes.[1-3,7-16] With Norinyl, no unplanned pregnancies have been reported to date when used as directed.

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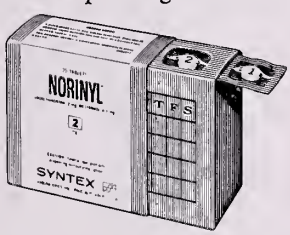

Contraindications: Thrombophlebitis or pulmonary embolism (current or past). Existing evidence does not support a causal relationship between use of Norinyl and development of thromboembolism. While a study which was conducted does not resolve definitively the possible etiologic relationship between progestational agents and intravascular clotting, it tends to confirm the findings of the Ad Hoc Advisory Committee appointed by the Food and Drug Administration to review this possibility. Cardiac, renal or hepatic dysfunction. Carcinoma of the breast or genital tract. Patients with a history of psychic depression should be carefully studied and the drug discontinued if depression recurs to marked degree. Patients with a history of cerebral vascular accident.

Warning: Discontinue medication pending examination if there is sudden partial or complete loss of vision, or if there is a sudden onset of proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn.

Precautions: By May 1963, experience with norethindrone 2 mg.–mestranol 0.1 mg. had extended over 24 months. Through miscalculation, omission or error in taking the recommended dosage of Norinyl, pregnancy may result. If regular menses fail to appear and treatment schedule has not been adhered to, or if patient misses two menstrual periods, possibility of pregnancy should be resolved before resuming Norinyl. If pregnancy is established, Norinyl should be discontinued during period of gestation since virilization of the female fetus has been reported with oral use of progestational agents or estrogen. When lactation is desired, withhold Norinyl until nursing needs are established. Existing uterine fibroids may increase in size. In metabolic or endocrine disorders, careful clinical preevaluation is indicated. A few patients without evidence of hyperthyroidism had elevated serum protein-bound iodine levels, which in the light of present knowledge, does not necessarily imply hyperthyroidism. Protein-bound iodine increased following estrogen administration. Bromsulphalein retention has occurred in up to 25% of patients without evidence of hepatic dysfunction. Studies from 24-hour urine collections have shown an increase in aldosterone and 17-ketosteroids and decrease in 17-hydroxycorticoid levels. Thus, Norinyl should be discontinued prior to and during thyroid, liver or adrenal function tests. Because progestational agents may cause fluid retention, conditions such as epilepsy, migraine and asthma require careful observation. Thus far no deleterious effect on pituitary, ovarian or adrenal function has been noted; however, long-range possible effect on these and other organs must await more prolonged observation. Norinyl should be used with caution in patients with bone, renal or any disease involving calcium or phosphorus metabolism.

Side Effects: Intermenstrual bleeding; amenorrhea; symptoms resembling early pregnancy, such as nausea, breast engorgement or enlargement, chloasma and minor degree of fluid retention (if these should occur and patient has not strictly adhered to medication plan, she should be tested for pregnancy); weight gain; subjective complaints such as headache, dizziness, nervousness, irritability; in a few patients libido was increased. In a total of 3,090 patients, 2.2% discontinued medication because of nausea.

NOTE: See sections on contraindications and precautions for possible side effects on other organ systems.

Dosage and Administration: One Norinyl tablet orally for 20 days, commencing on day 5 through and including day 24 of the menstrual cycle. (Day 1 is the first day of menstrual bleeding.)

Availability: Dispensers of 20 and 60 tablets; bottles of 100.

References: 1. Council on Drugs. JAMA 187:664 (Feb. 29) 1964. 2. Bryans, F. E.: Canad Med Ass J 92:287 (Feb. 6) 1965. 3. Goldzieher, J. W.: Med Clin N Amer 48:529 (Mar.) 1964. 4. Cohen, M. R.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965. 5. Hammond, D. O.: Ibid. 6. Rice-Wray, E., Goldzieher, J. W., and Aranda-Rosell, A.: Fertil Steril 14:402 (Jul.-Aug.) 1963. 7. Goldzieher, J. W., Moses, L. E., and Ellis, L. T.: JAMA 180:359 (May 5) 1962. 8. Kempers, R. D.: GP 29:88 (Jan.) 1964. 9. Tyler, E. T.: JAMA 187:562 (Feb. 22) 1964. 10. Rudel, H. W., Martinez-Manautou, J., and Maqueo-Topete, M.: Fertil Steril 16:158 (Mar.-Apr.) 1965. 11. Flowers, C. E., Jr.: N Carolina Med J 25:139 (Apr.) 1964. 12. Goldzieher, J. W.: Appl Ther 6:503 (June) 1964. 13. The Control of Fertility. Report adopted by the Committee on Human Reproduction of the American Medical Association. JAMA 194:462 (Oct. 25) 1965. 14. Flowers, C. E., Jr.: JAMA 188:1115 (June 29) 1964. 15. Merritt, R. I.: Appl Ther 6:427 (May) 1964. 16. Newland, D. O.: Paper presented at Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965. Reported in Med Sci 16:26 (Nov.) 1965.

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Executive Secretary: Donald G. Derry, 1809 E. 18th Ave., Denver. Office Telephone 399-1222.

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Alternate Delegate to the A.M.A.: Robert W. Thometz, Butte
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Nevada State Medical Association

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Councilors for Two Years: Harry D. Ellis, Santa Fe; Armin T. Keil, Raton.

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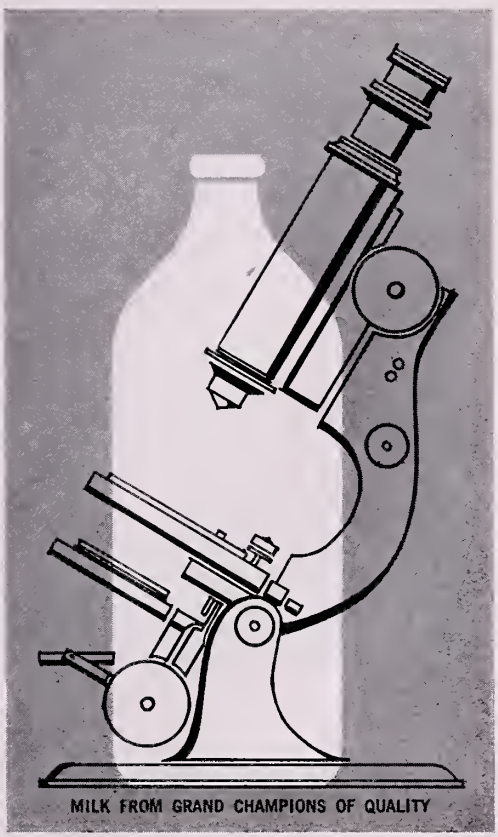

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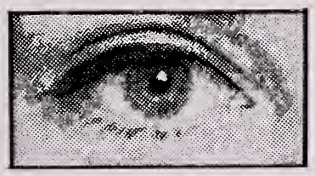

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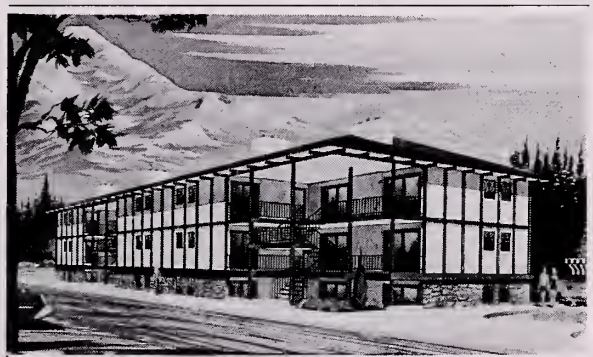

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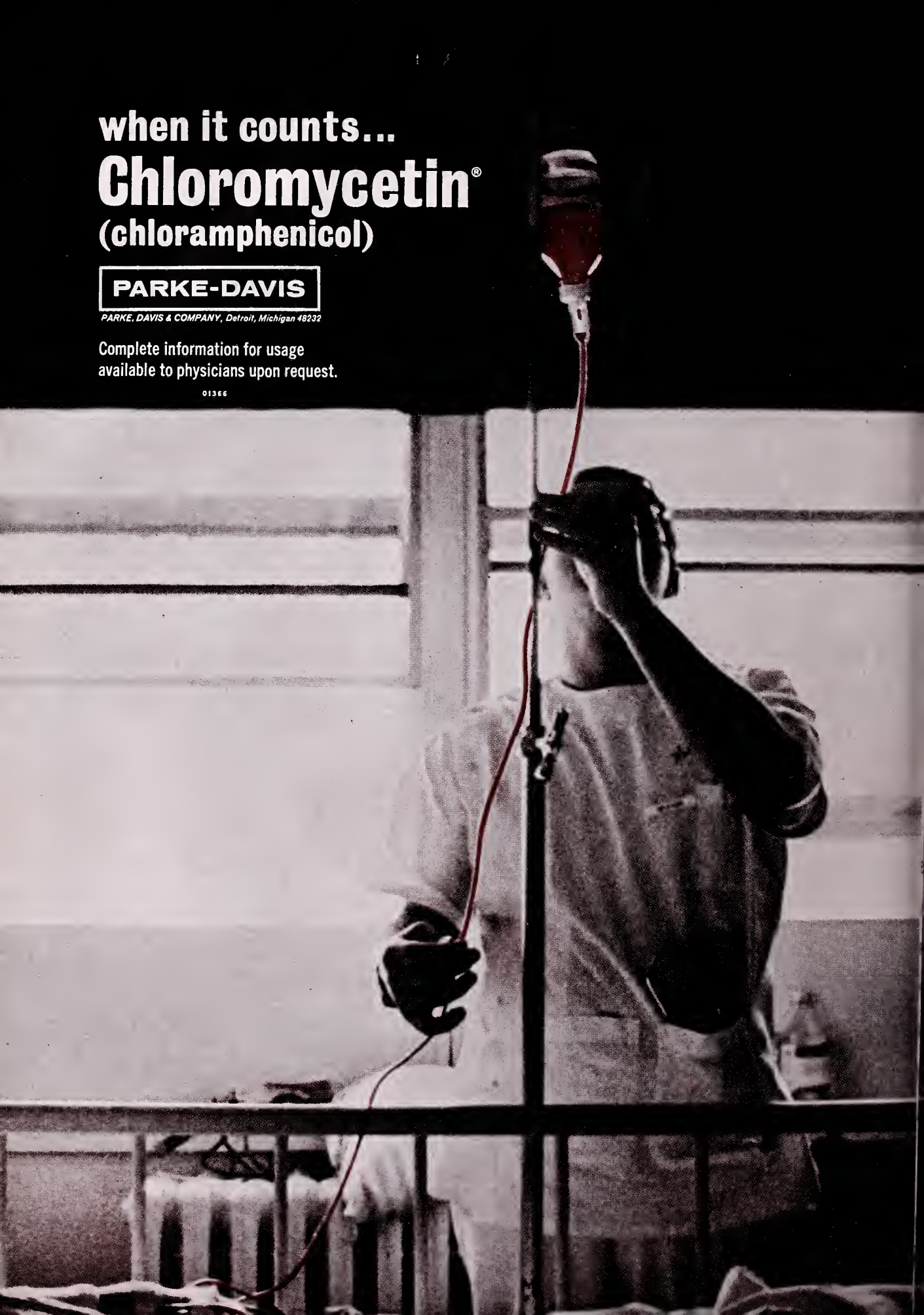
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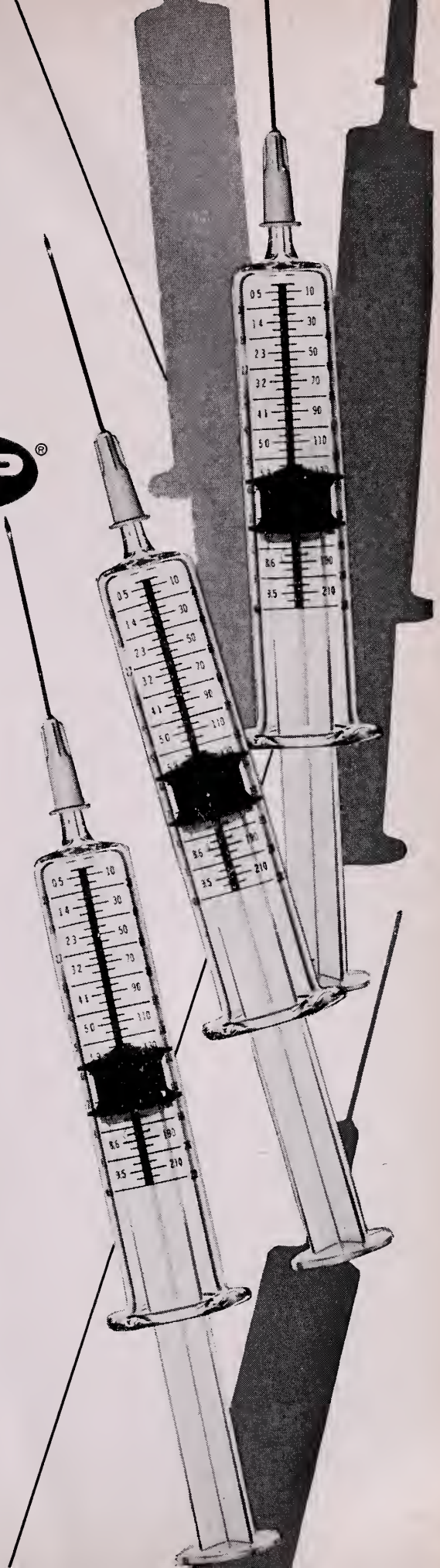

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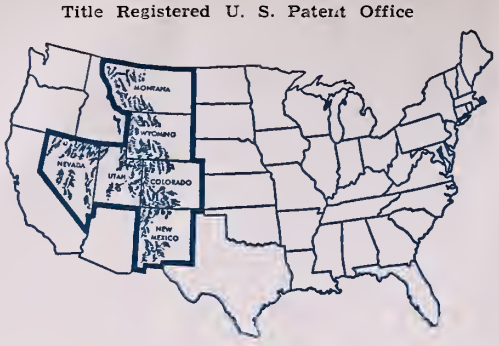

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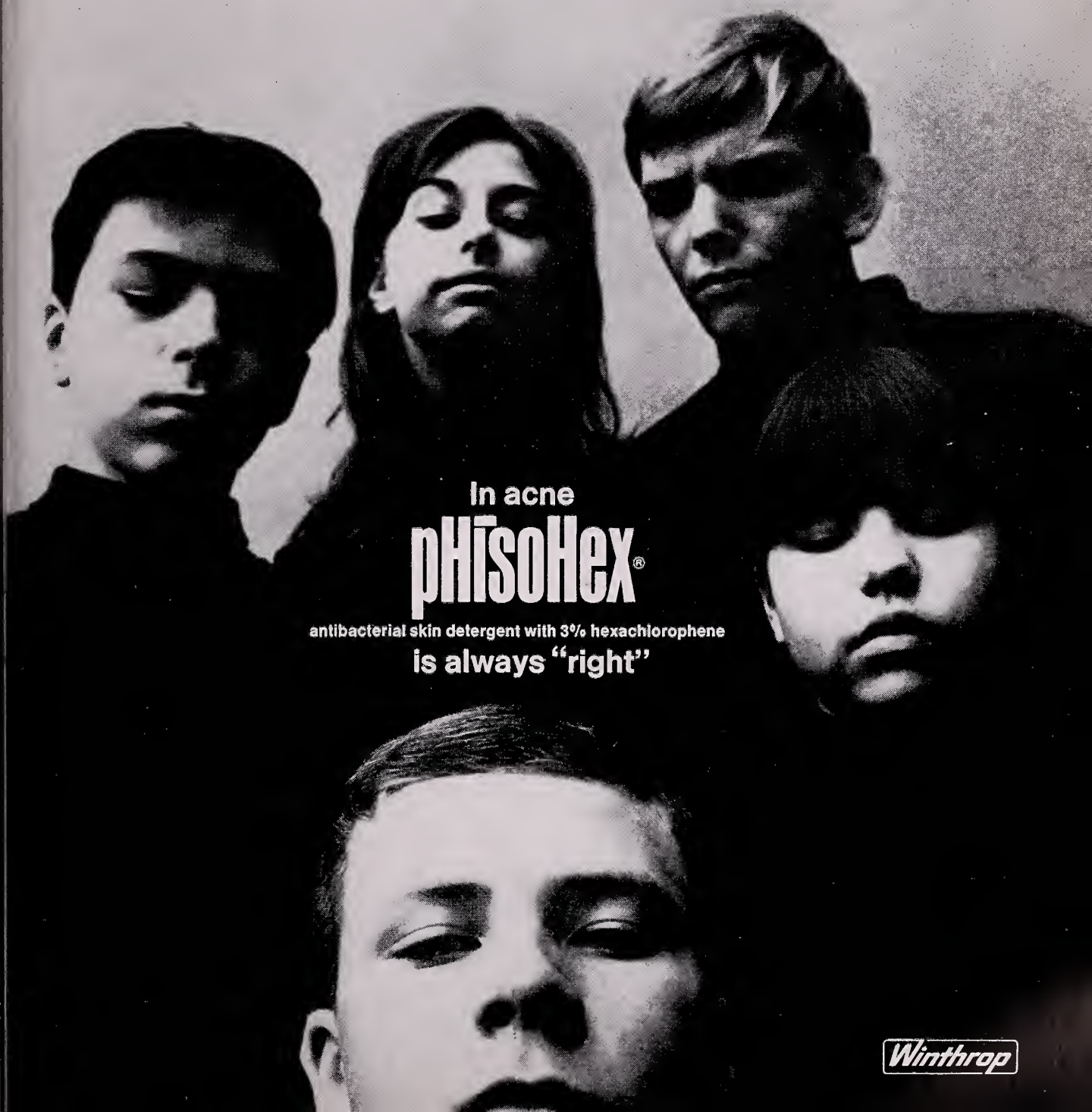

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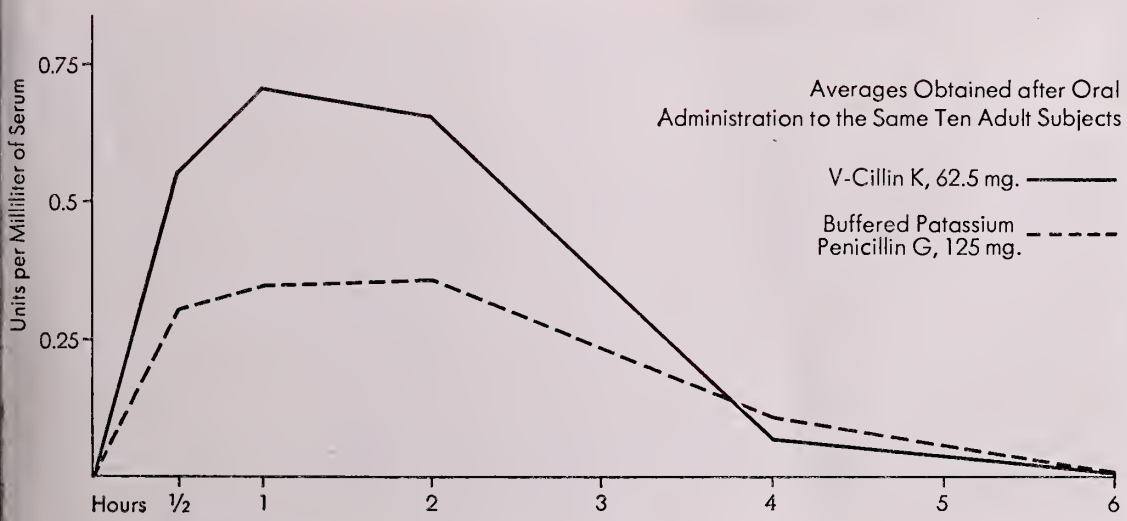
Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

with high blood levels, even in the presence of food



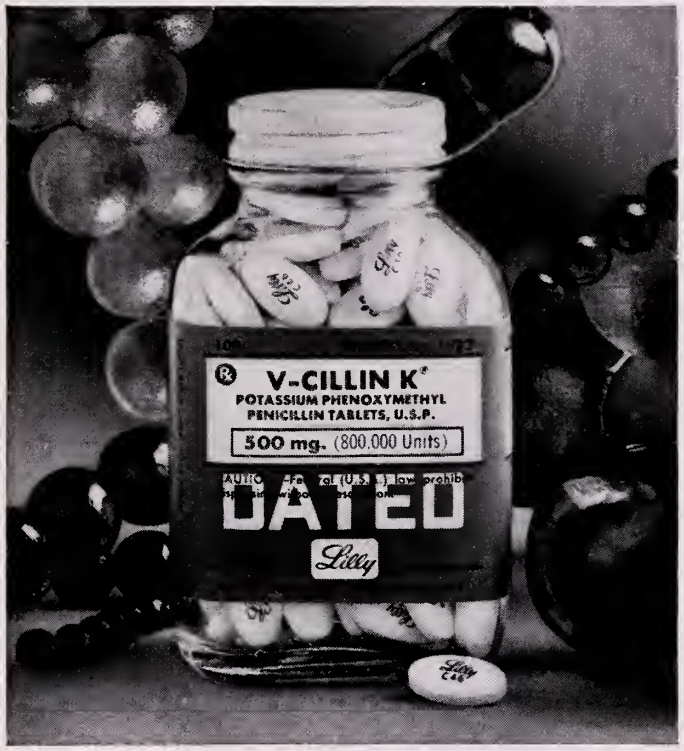
Adopted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

V-Cillin K® Lilly 700636

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in potients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other ollergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delaye effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patier with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with hig parenteral dosage schedules, frequent evaluation of the renal an hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studie (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth c pencillin-insensitive organisms. In such cases, its administration shoul be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much le: common with administration of oral penicillin than with intramuscul forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a signi cant index of sensitization. The following hypersensitivity reactior associated with the use of penicillin have been reported: skin rashe ranging from maculopopular eruptions to exfoliative dermatitis; ur caria; and reactions resembling serum sickness, including chills, feve edema, arthralgia, and prostration. Severe ond often fatal anaphylax has occurred (see Warnings). Hemolytic anemia, leukopenia, thror bocytopenia, and nephropathy are rarely observed side-effects ar are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin Pediatric, the usual dosage ranges from 125 mg. (200,000 units) thre times a day to 500 mg. (800,000 units) every four hours. For infant the daily dosage may be 50 mg. per Kg. of body weight divided in three doses.

Beta-hemolytic streptococcus infections without associated ba teremia may be treated with 200,000 to 400,0000 units three times day. Therapy should be continued for o minimum of ten days to preve development of rheumotic fever and/or other serious complicatior Dosage for routine streptococcus prophylaxis in patients with o histo of rheumatic fever or congenital heart disease may be 200,000 un once or twice daily. When such patients undergo tonsillectomy, too extraction, or other minor surgery, the prophylactic dose should 500,000 units every six hours given two doys prior to surgery and f two days postoperatively. If oral medication is not feasible on the d of surgery, parenteral therapy should be considered. Mild to mod ately severe pneumococcus pneumonia has been treoted effective with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be giv every six to eight hours in conjunction with indicoted surgical proc dures.

For gonorrhea in males, 500 mg. (800,000 units) every four hou for three doses may be employed; in females, 500 mg. every four hou for six doses are recommended. Patients with a suspected lesion syphilis should have a dork-field examination before receiving penicil and monthly serologic tests for o minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 m (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Orol Solution, 125 mg. (200,0000 units) 5 cc. of solution, in 40, 80, and 150-cc.-size pockages. [011867]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiono 46206.

Lilly

70

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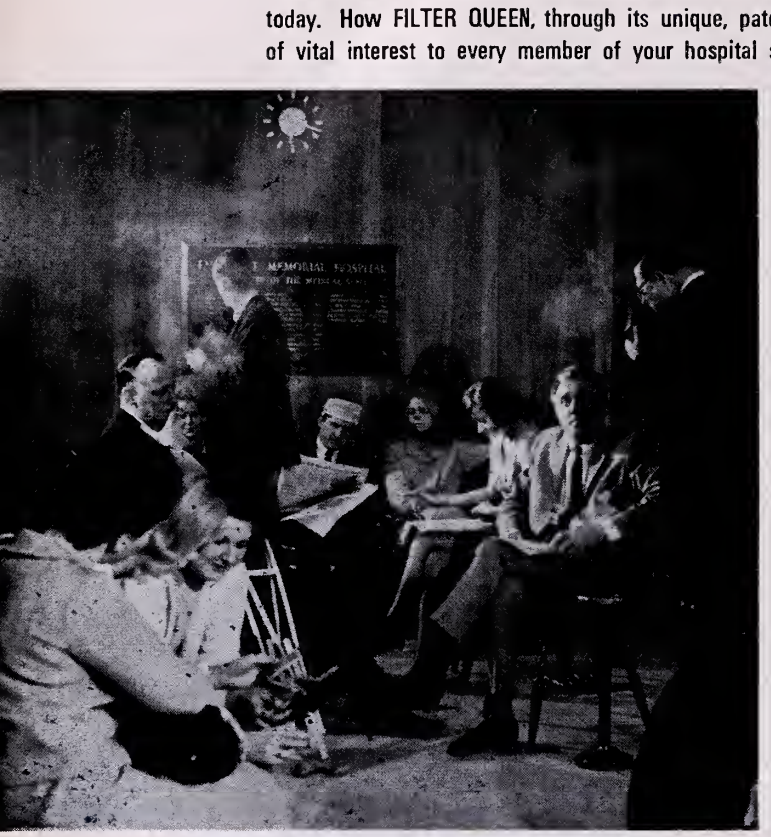

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tern Hospital	Minneapolis, Minnesota
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The engineers who perfected the FILTER QUEEN machine clearly recognized that all bag-type vacuum cleaners cannot operate with maximum efficiency because they use a porous bag. So, to make suction cleaning action truly efficient, they had to find a way to overcome the leakage in dust and dirt that so often occurs whenever a porous bag is used.

The highly successful result was an entirely *different* air flow principle, known today as Cyclonic Cleaning Action. By using Cyclonic Cleaning Action, FILTER QUEEN'S designers succeeded in not only collecting the dust and dirt normally collected by vacuuming; they also succeeded in trapping almost invisible airborne contaminants that formerly escaped back to repollute the air.

The difference between FILTER QUEEN'S remarkable Cyclonic Cleaning Action and ordinary vacuuming becomes immediately apparent when the Smoke Test pictured at left is made. Smoke, other contaminants and offensive odors virtually disappear. The room not only smells clean—it *is* clean!

The key to this almost magic action is FILTER QUEEN'S patented Sanitary Filter Cone. (See illustration.) Inrushing air, laden with dirt and dust, is deflected by a patented inlet guide as it enters the FILTER QUEEN container, then is whirled away by centrifugal force. Foreign matter heavier than air is forced to the bottom and the sides.

Clean air is filtered through our exclusive Sanitary Filter Cone *above* floor level, leaving smoke as well as dirt and dust trapped in the container. That is why hundreds of hospitals and other institutions insist on the FILTER QUEEN Sanitation System over any type of vacuum cleaner.

Ask your local FILTER QUEEN Distributor to make FILTER QUEEN'S dramatic Smoke Test in your hospital. Then you will *KNOW* why we proudly call it a FILTER QUEEN Sanitation System instead of a "vacuum cleaner."

DOCUMENTARY PROOF: *We would like to send you, with our compliments, an article entitled "Air Hygiene for Hospitals" which appeared in the Journal of the American Medical Association. In this article it is explained what happened to airborne contaminants when a FILTER QUEEN was used in a series of rigidly controlled tests conducted at the Harvard Medical School. Write to Health-Mor, Inc., 203 North Wabash Ave., Chicago, Illinois 60601*

The FILTER QUEEN sanitary filter cone is a scientifically-designed dust separator, composed of a special long-fibred mat of pure cellulose, chemically treated to give it the necessary strength and air-filtering characteristics.

FILTER QUEEN is a product of HEALTH-MOR, INC.,
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You'll find FILTER QUEEN Sanitation Systems listed in your Yellow Pages under "Vacuum Cleaners". (That's because FILTER QUEEN is fast replacing ordinary vacuum cleaners.)

FILTER QUEEN

The cleaning method that does so much more it has to be called a Sanitation System.

The full ¼ grain of phenobarb in the formula

takes the nervous edge off the pain ...helps bring out the best in codeine

Phenaphen® with Codeine

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Each capsule contains:

Phenobarbital (¼ gr.) ..... 16.2 mg.
(Warning: may be habit forming)
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Hyoscyamine sulfate.....0.031 mg.
Codeine phosphate.....¼ gr. (No. 2), ½ gr. (No. 3), 1 gr. (No. 4)
(Warning: may be habit forming)

Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoi excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipatio and drowsiness have been reported.

A-H-ROBIN

A. H. ROBINS CO., INC., Richmond, Va. 23220

To "catch" your patient's cold so others won't...

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Naldecon®

Each tablet contains:	Outer layer (immediate action)	Core (sustained action)
phenylpropanolamine HCl	20 mg	20 mg
phenylephrine HCl	5 mg	5 mg
phenyltoloxamine citrate	7.5 mg	7.5 mg
chlorpheniramine maleate	2.5 mg	2.5 mg

Each teaspoonful (5 ml) of syrup contains the equivalent of one-half tablet

For rapid and sustained symptomatic relief of colds and minor upper respiratory infections.

Prescribing Information: For complete information consult Official Package Circular. **Effectiveness:** Clinical experience has shown this formulation to be effective in relieving the symptoms of nasal congestion associated with pollen allergy or minor upper respiratory infections (common cold, nasopharyngitis, acute and chronic sinusitis). **Precautions:** Do not drive or operate machinery while taking Naldecon. Exceed dose or give to children under 6 years old only on advice of physician. **Contraindications:** Severe hypertension, hyperthyroidism, serious organic heart disease or severe diabetes mellitus. **Usual Dose:** Adults: One tablet morning, midafternoon and evening. Naldecon tablets are scored and may be broken for fractional dosage, without loss of sustained-action effect. **Supplied:** Bottles of 50 and 500 tablets. Syrup, 1 pt. bottle.

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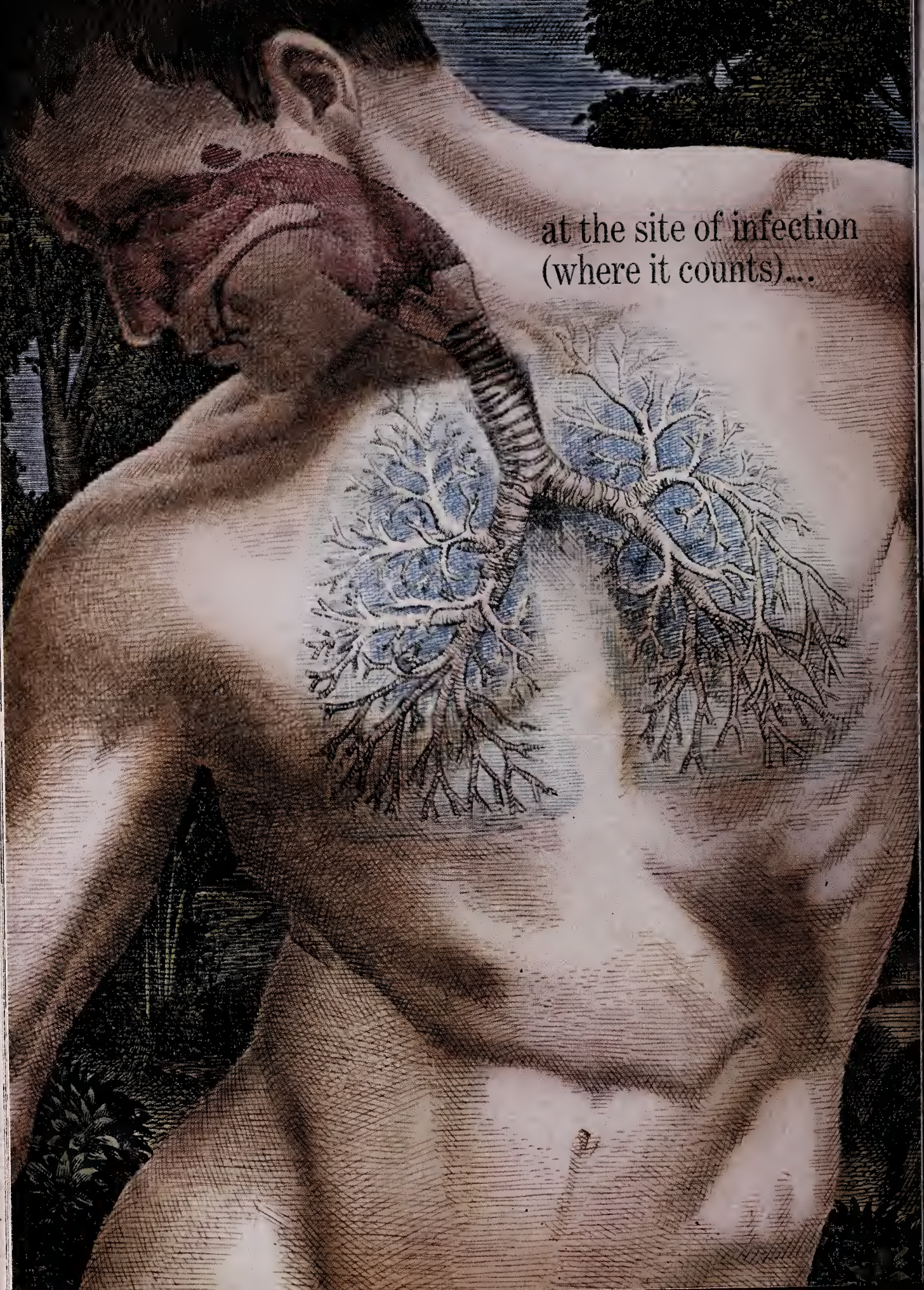
at the site of infection
(where it counts)....

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed ... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

Ilosone®

Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cephal flocculation and thymol turbidity tests, elevated serum glutam oxalacetic transaminase levels, peripheral eosinophilia, and no mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has n been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared wi those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilosо and in two patients treated with penicillin. Seven other patier in the group receiving Ilosone and four others in the penicil group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, we reported in 102 pediatric patients who received short-term (te day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients were co parable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the alimenta tract; however, the normal intestinal gram-negative bacter flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urticai skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of b weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six ho (Tablets Ilosone Chewable should be chewed or crushed swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromy therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stage syphilis. Examinations of spinal fluid are recommended as of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examina before receiving antibiotics, and monthly serologic tests sh be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to ba in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10 size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packa

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69,
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398,
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 19

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lil

spring 1967

DORSEY Season

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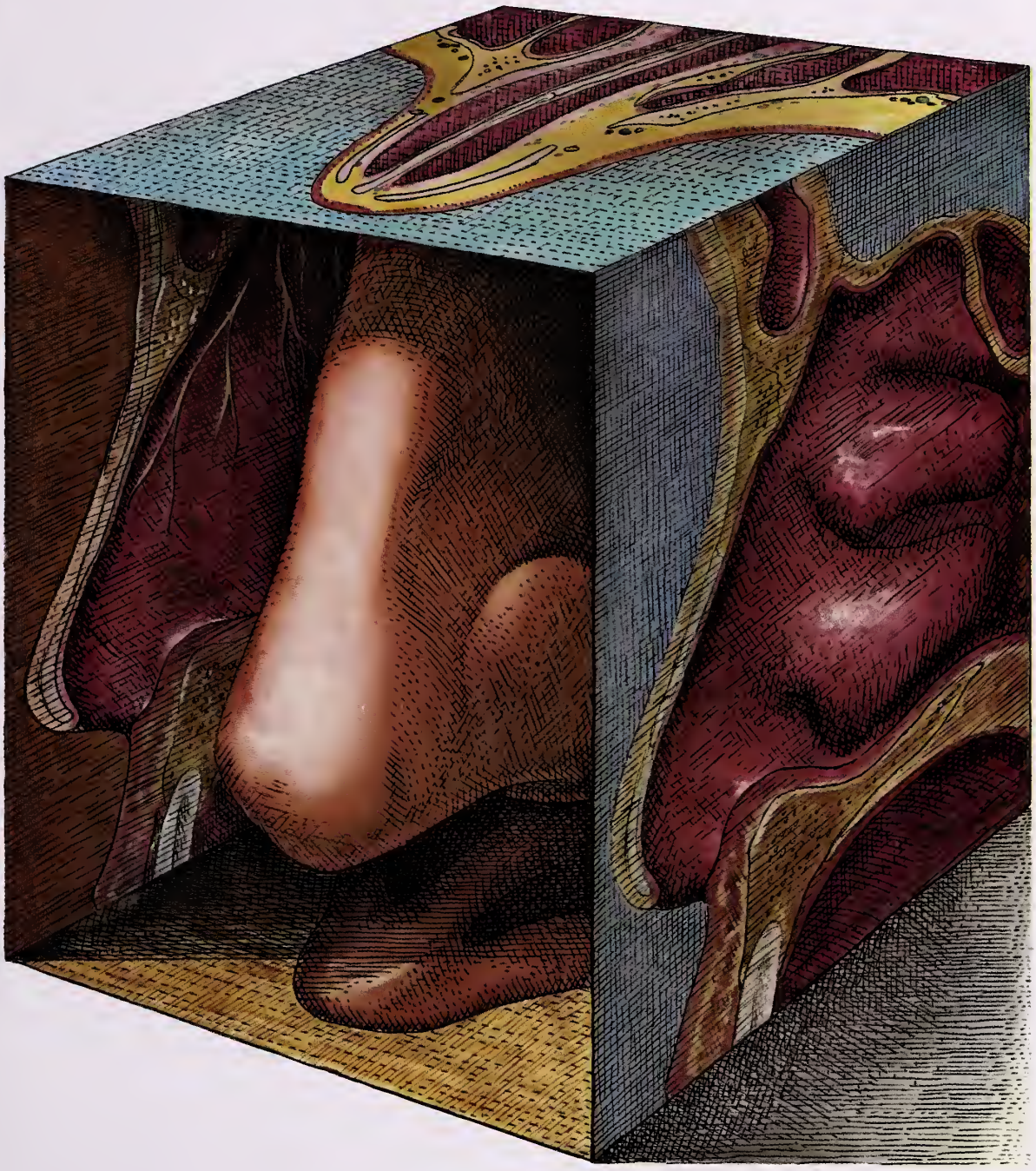


this issue: the ubiquitous world of summer allergies

the ubiquitous world of summer allergies

Donald L. Unger, M.D. • Clinical Assistant Professor, Department of Medicine (Allergy), Stritch School of Medicine (Loyola).

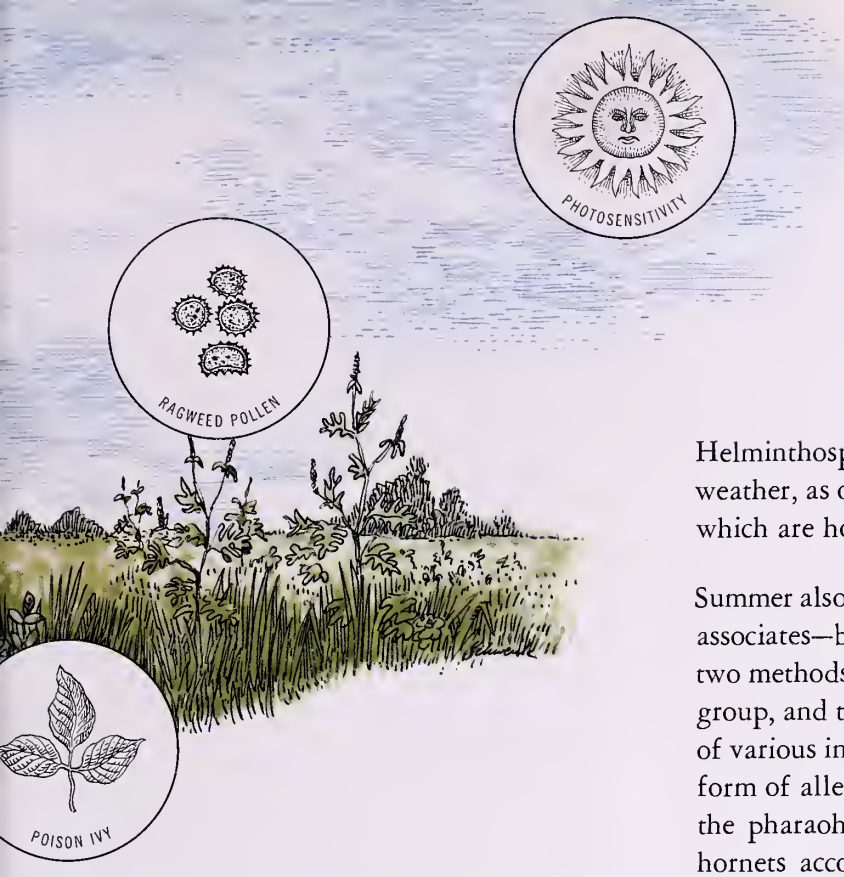
In the Spring a young man's fancy lightly turns to thoughts of—allergies. This is at least true of the 10% of the population who have hay fever and the 4% who have asthma.[1] The snow melts, the trees blossom and the noses run. Patients who were fine all winter may not be enthralled by the sight of the first robin or the blossoming of a crocus, for their appearances may precede the "sneezin' season."

Allergies in general can be divided into winter allergies and summer allergies. In the winter the main problems are inside the house: e.g. dogs, cats, dust and feathers. Houses in the northern half of the country become so dry that it becomes essential to add humidity to the home; this is a far cry from the damp summer months with the moldy basements and need for dehumidifiers.

Early in April trees begin to pollinate, with each tree having about a two week period of pollination. A particular patient may be sensitive to only one tree and thus have his hay fever for such a short time that he thinks he has a cold.[2] The entire tree season starts about April 1 and ends about Memorial Day, although all hay fever seasons are blurred and prolonged in the southern part of the country. Tree pollen is usually very heavy and a person may well have most of his exposure from those trees immediately surrounding his home.

Grasses pollinate from about May 15 until July 4, and cause "rose fever." Grass pollens are somewhat lighter and more buoyant than tree pollens, and are much more ubiquitous. While there are several varieties of grasses in the United States, they are so closely related antigenically that a person sensitive to one is generally sensitive to them all.[3] Thus, while the tree season is really several small seasons intertwined, the grass season will usually result in symptoms for a more prolonged period. Obviously, a grass-sensitive patient will have trouble only when grass is pollinating—he will have to think of another excuse not to mow the lawn after July 4.

Ragweed is the "Big Daddy" of them all in the eastern two-thirds of the country. Pollination is generally from mid-August until the end of September, with the predicted lower counts and longer seasons



in the southern part of the country. Ragweed is a very light pollen which may be windborne for hundreds of miles. An interesting study was made in New York City, in which 90% or more of the ragweed plants were destroyed in three of the five boroughs; pollen counts done during the season were virtually identical in all five.[4]

Ragweed is, of course, the most common cause of hay fever and is associated with an incredible loss of man hours from work each year. Many is the patient who travels to areas where the pollen count is low, just to avoid having symptoms. There is no ragweed anywhere in the world except the United States and portions of Canada and Mexico.

While molds are present through the year, the most important ones predominate from April until November. An old wives' tale has ragweed ending with the first frost, when actually it ends a good month earlier. It is Alternaria—the kingpin of the molds—that meets a sudden demise with the first frost. Alternaria-sensitive patients are in their glory when there is snow on the ground, and might be ideally suited to man the radar stations in Alaska. In September and October, Alternaria counts are at their highest, perhaps associated with the burning of leaves. Other molds such as Hormodendrum and Helminthosporium are associated with the warmer weather, as opposed to Penicillium and Aspergillus which are household molds.

Summer also means the return of our much maligned associates—bugs. Insects cause allergic symptoms by two methods: the bite or sting of the Hymenoptera group, and the inhalation of particles of the bodies of various insects. Wasp stings are the oldest known form of allergy, as they caused the death of one of the pharaohs in ancient Egypt.[5] Bees, wasps and hornets account for many deaths in this country, and those sensitive to them should carry special treatment kits at all times; a few minutes delay in the administration of epinephrine to such a patient, might be the difference between life and death. Inhalation of particles of insects may cause sneezing and wheezing in a susceptible individual.[6] Both of these forms of insect allergy may be benefitted by hyposensitization.

The insect recognizes no professional bounds. He is as apt to bite the physician as the patient. So this season, beware of bugs. And beware, too, of poison ivy. That pleasant stroll through the woods and underbrush with the Boy Scouts might turn into a

(Concluded on following page)

to relieve summer allergies

Triaminic®

Each timed-release tablet contains phenylpropanolamine hydrochloride 50 mg., pheniramine maleate 25 mg. and pyrilamine maleate 25 mg.

It's a comforting thing to know

For product information see following page

(Advertisement)

nightmare for the botanically uninitiated in the causes of rhus dermatitis (poison ivy, poison oak and poison sumac). Although you may have been careful, your dog may not have noted that it wasn't clover he jumped through, but poison ivy. His return to your side may give you the rhus dermatitis that you so carefully avoided. That heavenly campfire may be emitting particles of rhus oil to produce an airborne contact dermatitis of the exposed areas of the body.

Another fascinating, but rather infrequent type of summer allergy is physical allergy. Some people sneeze on exposure to sunlight, while others break out in rashes, usually on the exposed parts of the body. These rashes may well follow the administration of various photosensitizing drugs, e.g. demethylchlortetracycline.[7] Another form of physical allergy and one that may be lethal in the summer, is cold allergy. Yes, I mean cold allergy, not heat allergy. The cool dip on a hot day with its consequent sudden chilling of the body, may be the coup de grace for a cold sensitive patient.[8] It is customary to write "heart attack" on the death certificate, even though the victim may have been an 18-year-old boy who looks like a Greek god.

Lest the reader be depressed by this saga of afflictions associated with the warmer months, perhaps he should remember that it is also a time for swimming, baseball, lying in the sun and taking that long-planned vacation. So let's all join in a chorus of "In the Good Old Summertime," as we sneeze, wheeze and scratch. Be careful of your suntan lotion, however; it may cause you a contact dermatitis.

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How can he be a sport with a runny nose?

For summer allergies, summer colds, or nasal congestion due to almost any cause, you prescribe quick r-e-l-i-e-f with Triaminic. It's ideal for summer allergies:

1. Acts in 15-30 minutes due to decongestant.
2. Follows up with balanced dual antihistamines.
3. Up to 24-hour 'round the clock relief when dosed one tablet at morning, mid-afternoon and evening.

Summer time is sport time and who can be a sport with a runny nose?

provide patient comfort

Triaminic® relieves summer allergies

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitation, flushing, dizziness, nervousness or gastrointestinal upsets.

Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

(Advertisement)

- Soyalac satisfies! Baby is happy, mother is grateful, doctor is gratified.
- The nut-like taste is pleasing. Infants readily accept this hypo-allergenic formula that is completely fibre-free. An exclusive process results in a consistency much like milk.
- Soyalac is strikingly similar to mother's milk in composition and ease of assimilation. Clinical data furnish evidence of Soyalac's value in promoting normal growth and development.
- Excellent for regular infant feeding, too—and for growing children and adults.

Soyalac

Free Booklet and Samples

A request on your professional letterhead or prescription form will bring to you complete information and a supply of samples.

a product of

LOMA LINDA FOODS

MEDICAL PRODUCTS DIVISION

RIVERSIDE, CALIFORNIA

Mount Vernon, Ohio, U. S. A.

Posed by professional model.

You can't set her free. But you can help her feel less anxious.

You know this woman.

She's anxious, tense, irritable. She's felt this way for months.

Beset by the seemingly insurmountable problems of raising a young family, and confined to the home most of the time, her symptoms reflect a sense of inadequacy and isolation. Your reassurance and guidance may have helped some, but not enough.

SERAX (oxazepam) cannot change her environment, of course. But it can help relieve anxiety, tension, agitation and irritability, thus strengthening her ability to cope with day-to-day problems. Eventually—as she regains confidence and composure—your counsel may be all the support she needs.

Indicated in anxiety, tension, agitation, irritability, and anxiety associated with depression.

May be used in a broad range of patients, generally with considerable dosage flexibility.

Contraindications: History of previous hypersensitivity to oxazepam. Oxazepam is not indicated in psychoses.

Precautions: Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. One patient exhibiting drug dependency by taking a chronic overdose developed upon cessation questionable withdrawal symptoms. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

Not indicated in children under 6 years; absolute dosage for 6 to 12 year-olds not established.

Side Effects: Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (morbilliform, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leukopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age.

These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever, euphoria and dysmetria.

Availability: Capsules of 10, 15 and 30 mg. oxazepam.

To help you relieve anxiety and tension

Serax®
(oxazepam)

Wyeth® SERVICE TO MEDICINE

Wyeth Laboratories
Philadelphia, Pa.

"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

Photo professionally posed

Mike expects a penicillin injection. He's about to be pleasantly surprised.

His physician is going to prescribe an oral penicillin —Pen•Vee® K (potassium phenoxymethyl penicillin). It's usually so rapidly and completely absorbed that therapeutic serum levels are produced in 15 to 30 minutes. Higher serum levels generally last longer than with oral penicillin G.

Indications: Infections due to pathogens susceptible to oral penicillin G. Prophylaxis of rheumatic fever in patients with previous history of the disease.

Precautions: Skin rash, symptoms resembling those of serum sickness, or other manifestations of penicillin-allergy may occur. Measures for treating anaphylaxis should be readily available: epinephrine, oxygen and pressor drugs for relief of immediate allergic reactions; antihistamines and corticosteroids for delayed effects. Penicillin may delay or prevent the appearance of primary syphilitic lesions. Patients with gonorrhea who are suspected of concurrent syphilitic infections should be tested serologically for at least 3 months. Where lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. As with other antibiotics overgrowth of nonsusceptible organisms may occur; if so, discontinue and take appropriate measures. Treat β-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent development of rheumatic fever or glomerulonephritis.

Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.

Composition: Tablets—125 mg. (200,000 units) and 250 mg., (400,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL **PEN • VEE® K**

(potassium phenoxymethyl penicillin) Wyeth

In peptic ulcer... antacid therapy with a new benefit

CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

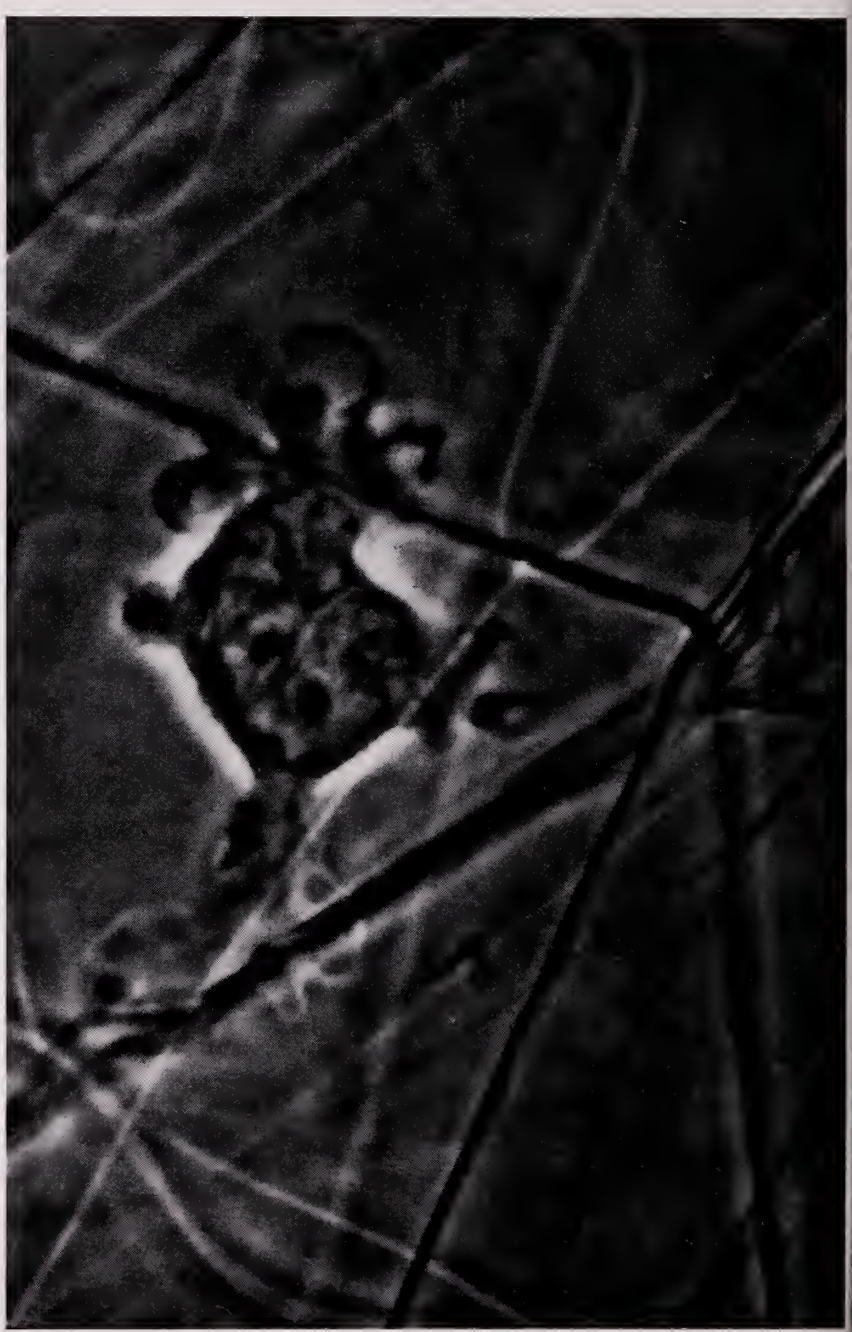
Stuart

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

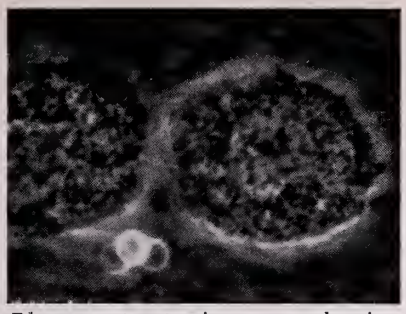


Visual evidence of how corticosteroids influence the inflammatory reaction

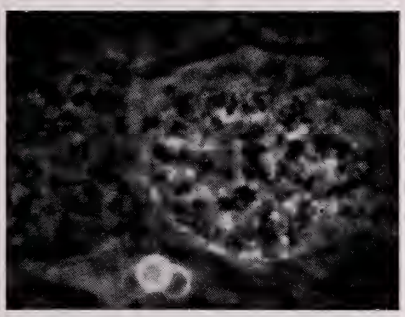
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



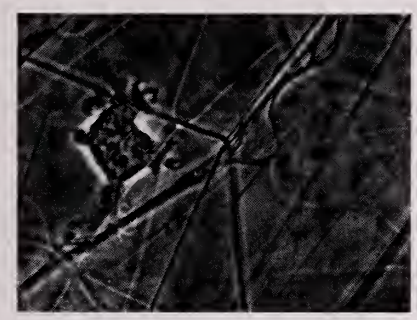
Phase-contrast microscopy showing mast cell before injury.



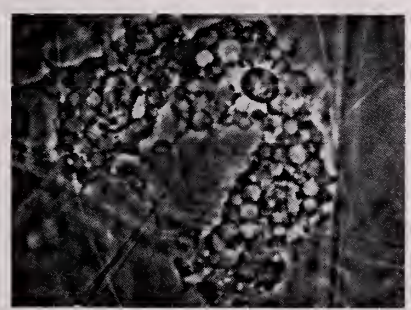
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid — Synalar (fluocinolone acetonide) — the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.

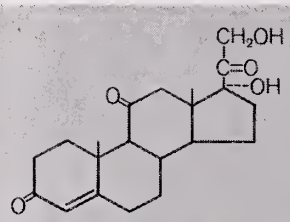
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

*A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

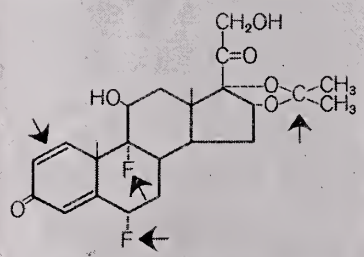
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

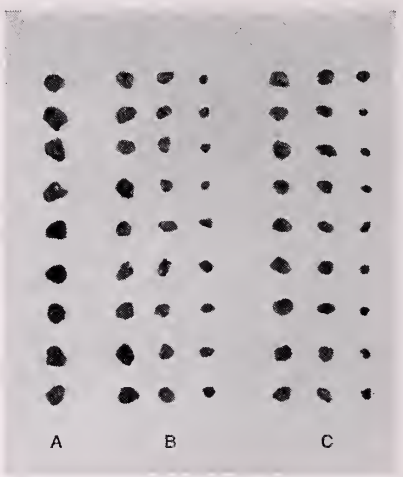


Fluocinolone Acetonide (Synalar)

- ☐ *a double bond between carbons 1 and 2*
- ☐ *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- ☐ *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.

THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes. CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolone acetonide — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

For inflammatory dermatoses... by any measure a topical corticosteroid of choice

Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards

How long will it take her to recover from her hip fracture if she just doesn't care?

Does she really care? Is she alert, encouraged, positive and optimistic about getting completely well soon?

Or has she given in to the demoralizing impact of confinement, disability and dependency?

When functional fatigue complicates convalescence, Alertonic can help...

Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that can often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

Adequate dosage is important: Prescribe Alertonic—one tablespoonful t.i.d., 30 minutes before meals...tastes best chilled.

And for your patient's sake, prescribe Alertonic in the convenient, economical one-pint bottle.

Alertonic®

Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

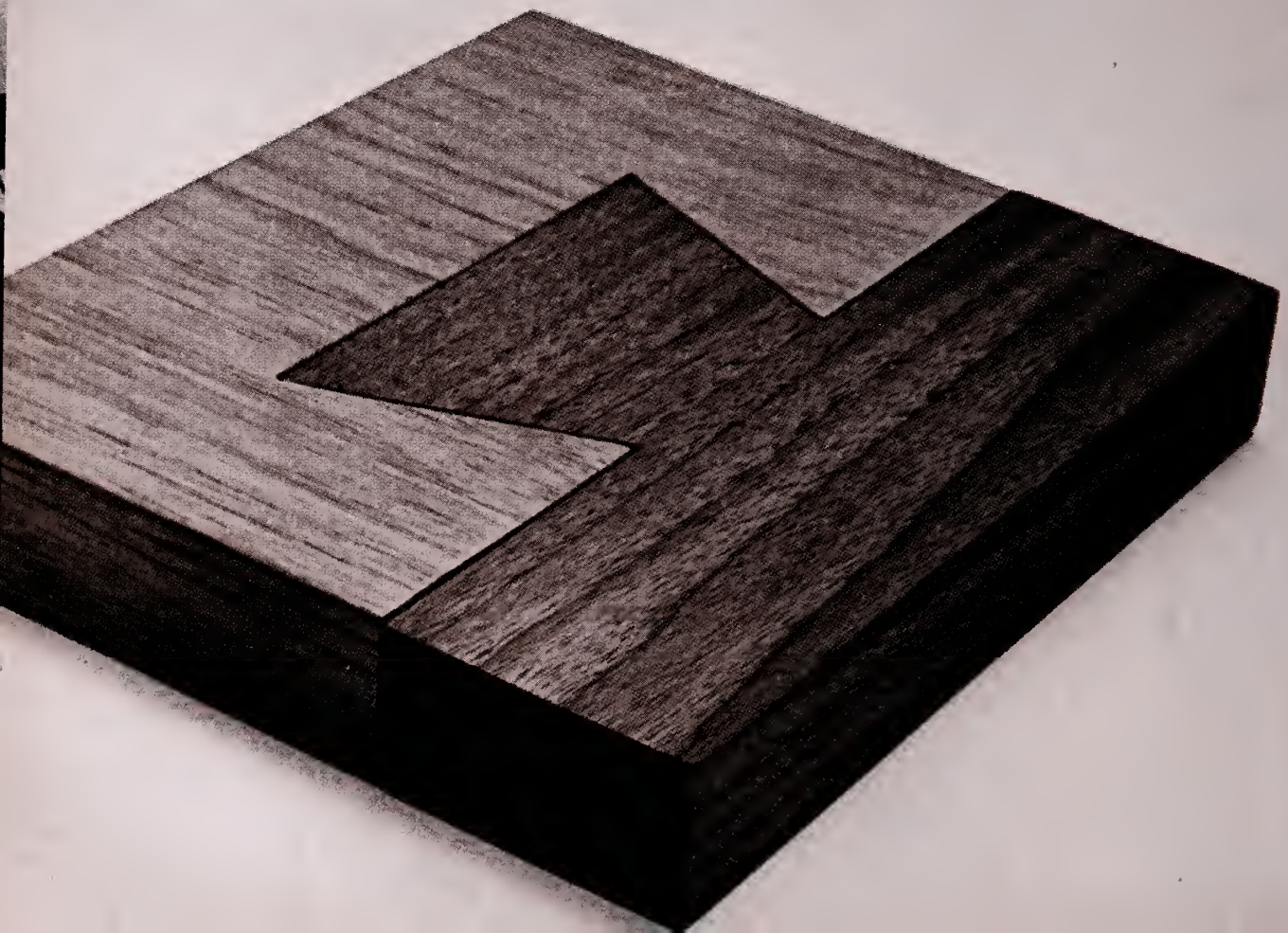
Merrell

THE WM. S. MERRELL COMPANY
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215

even better together in mild hypertension

Serpasil®-Esidrix®

(reserpine and hydrochlorothiazide CIBA) Combination Tablets

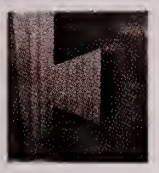


Serpasil-Esidrix combines reserpine (the original, and most widely used, rauwolfia alkaloid developed by CIBA) with hydrochlorothiazide (the most widely used oral diuretic, also a product of CIBA research).

even better blood pressure reduction—because 2 antihypertensive agents of choice often work better together

One drug potentiates the antihypertensive action of the other. Blood pressure is generally controlled with relatively low dosages of each component, often resulting in minimized side effects.

Although each component alone may provide adequate therapy in many cases of mild hypertension, the combination offers advantages which cannot be achieved with single-drug therapy.



even more patient benefits—because complementary actions of 2 antihypertensive agents extend the range of advantages

Reserpine, in addition to lowering blood pressure, provides central calming action to help relieve anxiety and tension; provides bradycrotic action to slow the rapid heart.

Hydrochlorothiazide, in addition to lowering blood pressure, relieves edema; permits relaxation of salt restriction.

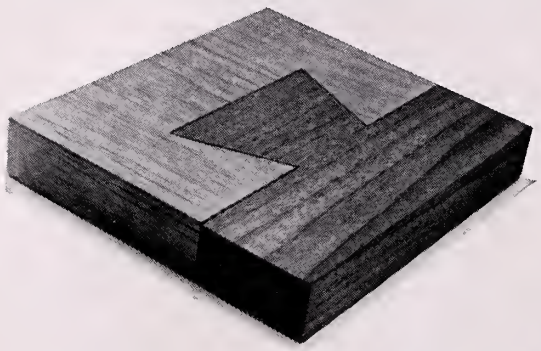
The combination provides medication in one tablet instead of two; one prescription instead of two—encourages patient adherence to the regimen, offers economy.

for your next patient with mild hypertension

Rx Serpasil-Esidrix Combination Tablets

Please see following page for prescribing information.

Serpasil®-Esidrix®
(reserpine and hydrochlorothiazide CIBA)
Combination Tablets



INDICATIONS: Mild to moderate hypertension, especially when complicated by anxiety, tachycardia, or edema.

SIDE EFFECTS AND PRECAUTIONARY MEASURES

Serpasil® (reserpine CIBA)
Occasional side effects: lassitude, drowsiness, nasal congestion, looseness of stools, increased frequency of defecation. Rare side effects: anorexia, headache, bizarre dreams, nausea, dizziness, skin rash.

Severe mental depression has appeared in a small percentage of patients, primarily in a dosage above 1 mg daily. When the drug is discontinued, depression usually disappears, but hospitalization and shock therapy are sometimes required.

Caution: Withdraw reserpine 2 weeks before surgery, if possible. For emergency surgical procedures, give vagal blocking agents parenterally to prevent or reverse hypotension and/or bradycardia.

Because reserpine may increase gastric secretion of hydrochloric acid, use cautiously in patients with peptic ulcer.

Use cautiously with digitalis, quinidine, or guanethidine. Not recommended for aortic insufficiency.

Esidrix® (hydrochlorothiazide CIBA)
Contraindictions: Oliguria, renal shutdown, progressive hepatic disease, and allergy to thiazides.

Warnings: Stenosis, hemorrhage, and ulceration of the small bowel have occurred with coated potassium tablets. Discontinue such medication when used with Esidrix if gastrointestinal disturbances arise.

Pay special attention to electrolyte balance of patients with severe renal or hepatic insufficiency. In patients with cirrhosis and ascites, watch for symptoms of impending hepatic coma. Thiazides may decrease glucose tolerance; use cautiously in diabetics. Hyperuricemia may occur but is readily reversed by a uricosuric agent. Lowering of blood pressure may sometimes result in nitrogen retention, particularly in patients with impaired renal function. Dosage titration is necessary in such patients.

Precautions: Watch for signs of fluid or electrolyte imbalance. Further electrolyte depletion may cause hypochloremic alkalosis and hypokalemia. Since the latter may precipitate digitalis intoxication, watch carefully patients who are taking digitalis or its glycosides or those with cardiac arrhythmias. In severe hypokalemia, large oral or intravenous doses of potassium may be required.

A few infants born of mothers who received thiazides during pregnancy have shown bone marrow depression with thrombocytopenia. Hydrochlorothiazide decreases responsiveness to exogenous norepinephrine and increases responsiveness to tubocurarine. Hypotensive episodes under anesthesia have been observed in some patients receiving thiazides.

Side Effects: In addition to those above, nausea, anorexia, headache, restlessness, constipation, dizziness, paresthesias, fatigue, increased sweating, cramps in arms and legs, diarrhea, abdominal pain. Rare reactions: purpura with or without thrombocytopenia, skin rash, photosensitivity, urticaria. Sometimes associated with hydrochlorothiazide: leukopenia, agranulocytosis, aplastic anemia, pancreatitis, jaundice, necrotizing vasculitis.

DOSAGE
Average dosage is 2 *Tablets #2* daily. For patients requiring less hydrochlorothiazide, substitute *Tablets #1*. For maintenance, reduce dosage to lowest effective level. When necessary, more potent antihypertensive agents may be added gradually in reduced dosages.

SUPPLIED
Tablets #2 (light orange), each containing 0.1 mg reserpine and 50 mg hydrochlorothiazide; bottles of 100 and 1000. *Tablets #1* (light orange), each containing 0.1 mg reserpine and 25 mg hydrochlorothiazide; bottles of 100 and 1000.

Consult complete literature before prescribing.

CIBA Pharmaceutical Company, Summit, N. J. C I B A

2/3595

A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .

Consider starting your hypertensives on this basic thiazide

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Enduron eliminates sodium around the clock, yet is relatively sparing of potassium

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect — with little reduction in intensity during the first 12 hours, and decline thereafter only gradual.

Potassium loss, in contrast, reaches an early minor peak. Then it subsides rapidly. Moreover, doses larger than 5 mg. have little added effect on potassium. Thus doubling the dose from 5 to 10 mg. approximately doubles sodium excretion—yet increases potassium loss little or none.

Use Enduron once a day as an ideal starting therapy in mild hypertension. Use it, too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE

DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

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The deserpidine component compares favorably to reserpine, but with reduced side effects

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid. It is comparable to reserpine in its antihypertensive and tranquilizing activity. Yet it produces less tendency toward typical rauwolfia side effects such as drowsiness, lethargy, stuffy nose, depression, etc.

Patient acceptance has been excellent.

Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most needed: in the deserpidine. These scored tablets give a surprisingly flexible choice of doses (see below).

Use Enduronyl for your patients within the broad range of mild to moderate hypertension. Dosage is *once* a day: this means Enduronyl will generally cost patients less than equivalent drugs taken two or three times daily.

Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

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Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance, with little or no effect upon cardiac output.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied — including some unusually difficult cases. Eutonyl lowers diastolic in proportion to systolic, and in half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, many patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

ABBOTT

Only a 7/4 mm. span between standing and recumbent pressures—reduced chance of orthastatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

Indeed, fully 94.5% of all patients studied during clinical trials continued on therapy uninterrupted by side effects.

Most striking was the drug's action in lowering blood pressure to *nearly equal levels in all body positions.* Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, with reduced likelihood of orthostatic effects. And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

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ENDURON®
METHYCLOTHIAZIDE

ENDURONYL®
Each tablet contains Methyclothiazide 5 mg.
with Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild hypertension. Also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Enduronyl is contraindicated in severe mental depression, active peptic ulcer, and ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small bowel lesions; if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical.

Precautions and Adverse Reactions: Use thiazides with caution in severe renal dysfunction. Caution is also necessary with impaired hepatic function or progressive liver disease. During intensive or prolonged thiazide therapy, watch chloride and potassium levels (especially the latter if patient is on digitalis). In surgical patients, thiazides may alter response to vasopressors and tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism are possible in certain newborn). Occasional thiazide side effects also include blood dyscrasias; elevations of BUN, serum uric acid, or blood sugar; electrolyte imbalance, g.i. disturbances, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, pancreatitis, and gout.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfias may increase hypotensive effects of surgery or anesthesia, and are best discontinued two weeks prior. They also lower the convulsive threshold in epilepsy. Other possible rauwolfia side effects include drowsiness, nasal stuffiness, nausea, weight gain, and diarrhea. Less frequent complications of deserpidine therapy are aggravation of peptic ulcer, epistaxis, and skin eruption. Alcohol, barbiturates or narcotics may potentiate action of deserpidine.

EUTONYL®
PARGYLINE HYDROCHLORIDE

EUTRON™
Each tablet contains Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for use in patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone.

Contraindications: Pheochromocytoma, advanced renal disease, paranoid schizophrenia and hyperthyroidism. Until further experience is gained, not recommended for use in patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. Interval of two weeks should separate therapy and use of these agents.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When necessary to administer alcohol, narcotics (meperidine should be avoided), antihistamines, anesthetics, barbiturates, chloral hydrate and other hypnotics, sedatives, tranquilizers, or caffeine, these can be used cautiously at a dosage of ¼ to 1/5 the usual amount. Adjust dose of anesthetic agents to response of patient. Avoid parenteral administration where possible. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or other evidence of coronary disease should not increase physical activity. Pargyline may lower blood sugar. Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions; if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver dysfunction or progressive liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields, and fundi.

During intensive or prolonged methyclothiazide therapy, watch chloride and potassium levels (especially latter if patient is on digitalis). Methyclothiazide also may reduce arterial response to pressor amines. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism are possible in certain newborns). Thiazide drugs may increase responsiveness to tubocurarine.

Side Effects: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extra-pyramidal symptoms have been reported. Drug fever is extremely rare. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Thiazide side effects also include blood dyscrasias, elevation of BUN, serum uric acid, or blood sugar, electrolyte imbalance, g.i. disturbances, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, pancreatitis, and gout. Nocturia has been observed with the combination.

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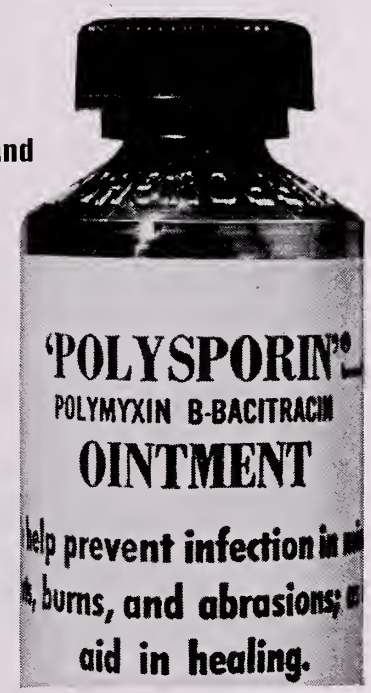
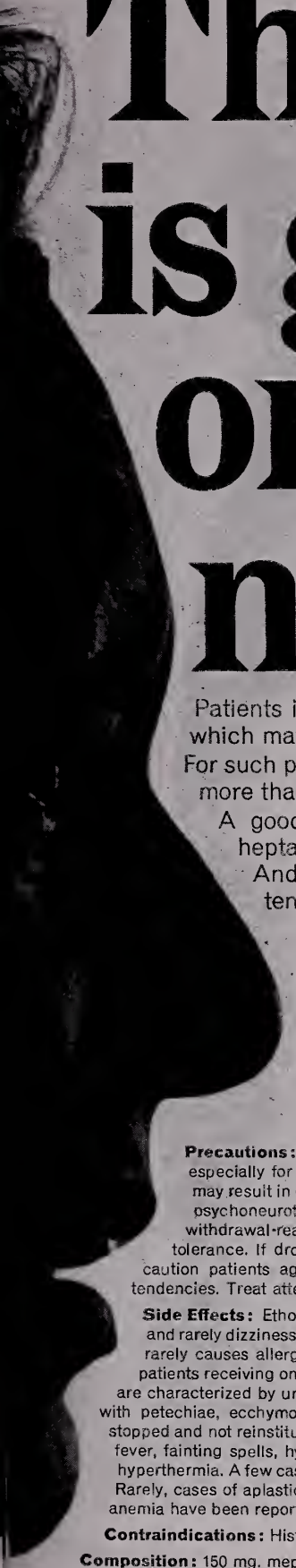


This pain is getting on my nerves.



Patients in pain often experience concomitant anxiety and tension, which may add to the burden of pain.

For such patients, you may want to prescribe a preparation that offers more than simple analgesia.

A good choice is often EQUAGESIC® (meprobamate and ethoheptazine citrate with aspirin). It helps relieve pain. And anxiety. And skeletal muscle spasm as related to pain or anxiety and tension.

Equagesic® TABLETS
(meprobamate and ethoheptazine citrate with aspirin)

Wyeth®

Precautions: Keep out of reach of children. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. Give cautiously to patients with suicidal tendencies. Treat attempted suicide with immediate gastric lavage and appropriate supportive therapy.

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness and CNS depression. Overdosage may result in salicylate intoxication. Meprobamate rarely causes allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioedema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

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Medicare—Diagnosis and Treatment

The Denver Medical Society at its meeting of March 7 was fortunate in having, as its guest speaker, Dr. Donovan Ward, President of the A.M.A. 1964-65. His announced title was Diagnosis and Treatment of Medicare, the end result of a certain disease which was brought into our country by the Fabians from England about the turn of the century. Thus it stems, as do we, from the Old World and today we share the products of their work as the disease has reached epidemic and pandemic proportions.

In recent years it was more or less fashionable for columnists to pan the A.M.A. One has said that anyone who warns of socialized medicine in the United States will be accused of being a tool of our parent organization. And there are hosts of politicians, among others, in Washington who pursue deep, ominous, and pervasive activities concerned with healing the sick, the aged, and the infirm.

Dr. Ward at once told his audience that he speaks not as an A.M.A. Past-President, but rather as an American citizen who believes in free enterprise and as a private practitioner of medicine. What's wrong with Medicare, he asked. For one thing, some nineteen million people became eligible last July for "free" medical care and untold millions are paying the bill—and will pay and pay, now and henceforth. The care goes to *all,* even those who don't need it and more who don't want it, just because they had a birthday—65. Thus, it is *not* based on need; it *is a tax, not insurance!*

After a mere eight months' trial run, all kinds of other "- - - cares" are cropping up, not limited to any one segment of the population. When we oppose them, we are called negative. The proponents haven't been satisfied to let the Bill be launched, put in working order, to be interpreted and understood and to progress in an orderly manner. Already the machinery is being initiated to provide podiatry, eye glasses, generic drugs. Congress is being asked to delete the three dollar charges and the fifty-dollar deductible provision, to include *all* disabled people, to reduce the age to 62 or even 60, to include *all* widows. Why all this in the face of such limited experience? Distrust of physicians is shown by those who demand certification and recertification of medical necessity, and who question our interpretation of our usual, reasonable, and normal services and charges.

Apparently Social Security wants full control to limit intermediary carriers. How long will it be before the Department of Health, Education, and Welfare will say they can do the job better without *any* intermediaries? Some of these carriers already wonder if they can carry on without local or regional custody of the records, about half of which have to be returned to patients for more information. The maze of paper work, misunderstanding, and bureaucratic management is what Congress is thinking of expanding! They don't admit that this is the greatest cause of rising medical costs. It is an established fact that *any* service taken from private and placed in government hands requires greater operating costs. Disregard of this truth is an insult to human intelligence. Our profession warned of this but were not paid heed, and now the public is bewildered regarding what Medicare will and will not do. We and our office employees are seeing more evidence of this every day. The older patients can't understand why Medicare doesn't pay all the bills. They don't know the first thing about it. Furthermore, the average wage earner is already bewildered and his world is topsy-turvy. Why, many of them feel, should they argue with the promise of security and medical care in their later years? This is the question for us to answer.

Some of the reasons for them to argue are stated above—and the workers need to be told. *This project is our responsibility!* Can we be blamed if we continue to oppose a measure which depends upon public ignorance for its survival? We fought and we twitched a few times while the "you asked for it, we gave it" 89th Congress put it through. We must do a lot more than twitch before America loses all of its freedom down a road of no return leading to the welfare state. Unfortunately, a few doctors have relaxed and aver that everything is just dandy —like modern art, things can't possibly be as bad as they are painted!

Now is the time for all of us, and everybody else, to take a second look. The press is doing so. Walter Lippmann says it stinks! We'll let that be his word, then hasten to admit that Medicare isn't all bad. It is still our job to see that America shall maintain its standard of the best medical care on earth, and we haven't the right to wash our hands of the whole affair. Where it is to our patients' advantage, let us go along with it. However, our generation, our children and their children must be educated to get it off the books, in its present form, while there is still time to get our country back on the right path before half or more of the population is included in the great give-away. This will happen unless our profession and other citizens of America work to preserve freedom. All can aim to make a bad situation better. Where the law is good, work with it; study its faults, point them out constructively to all levels of the population.

It is not the function of government to keep its citizens from erring, but rather for citizens to keep their government from falling into error! Physicians still active, the trainees, medical students and all future physicians must continue to search for a better way, to question, to probe, seek and find a cure for the Disease. And even then, still be unsatisfied!

Lead Poisoning

UNIQUE TO A REGIONAL MEDICAL JOURNAL is the opportunity to acquaint modern readers with aspects of medical history singular to the very region in which they now practice. Utah medical history, in common with that of other Rocky Mountain States, offers many remarkable, even heroic, episodes. However, lead poisoning was a particular problem in the Utah of the latter part of the 19th Century. There is no better accounting than that of Dr. Ralph T. Richards in his book, "Of Medicine, Hospitals and Doctors." No mere clinical summary, the depth of Dr. Richards' consideration is conveyed in his Preface (page xiii):

> To understand lead poisoning, which headed the list of local diseases for twenty years, it was necessary to inquire into the origin and development of mines and smelters and into the types of ore handled and the working conditions that accounted for the morbidity among the workmen. The deplorable prevalence of lead poisoning in Utah was not duplicated in any other region in the United States: not in Leadville, Colorado; Pioche, Nevada; Coeur d'Alene, Idaho; Southeast Missouri, or the greatest lead producer in the world—the Joplin district in Missouri and Kansas. It should be remembered that lead poisoning does not end with the mining and smelting of the mineral, but constitutes a menace to all the innumerable fabricators of lead, and in spite of the numerous safety measures introduced into industry, lead poisoning is still the most important of all industrial diseases.

Medical problems vary in specific nature from generation to generation. But, a recurring theme, one with us now to a dreadful and ever increasing extent, is man's apparent unlimited capacity to poison the environment as he exploits natural resources. In our time, the automobile and industry; in the early days of Utah, lead poisoning. Dr. Richards' account, Chapter II of his book, is presented in its entirety beginning on page 59 of this issue.

Dextran adds versatility in thrombophlebitis therapy

Robert B. Sawyer, MD, Denver

Treatment of thrombophlebitis is frequently stereotyped and follows a mechanical routine—bedrest, elevation, heat and anticoagulant therapy. Since thrombophlebitis is such a variable disease, treatment should be equally versatile. It should be planned to coincide with the needs of the patient and the severity of the disease. All modalities of therapy should be understood and used wisely as indicated.

One recent addition to the armamentarium available for thrombophlebitis therapy is the long-chain polymer of glucose known as dextran.[1] Best known as a plasma expander, the new application of this agent is as yet not widely understood. Our experience suggests that it has a useful place in thrombophlebitis therapy.

To talk of dextran is misleading; to talk of dextrans is more to the point. Dextrans differ widely in molecular weight, length of chains, and number of branching chains.[2] These variations in size and configuration give the different dextrans different physical attributes, hence different clinical applications. Dextrans are made by the action of bacterial organisms on sucrose, and the native product cannot be purified. However, it can be cut by partial hydrolysis and subsequent fractionation, providing the lower molecular weight agents of from 40,000 to 75,000.

Although the chemistry of these two agents is the same, their physical properties make them differ widely in clinical application. The dextran having an average molecular weight of 40,000, called Rheomacrodex or low molecular weight (LMW) dextran, has the ability of aligning itself in a perpendicular fashion on the tunica intima of the formed elements in the blood.[3] This "coating" increases the negativity of the formed elements and of the intima and causes an increase in the repulsive forces.[4] The result is an inhibition of intravascular aggregation with an improvement in flow, particularly in the small vessels. This agent is extremely valuable in low flow situations like ischemia, extracorporeal circulation, and shock.[5, 6, 7] Although Rheomacrodex will inhibit red cell aggregation, it will neither prevent propagation of a previously formed clot nor hasten its resolution.[8] Because of this it is of little value in the treatment of thrombophlebitis.

Clinical dextran, which has a molecular weight of 75,000, is available in a 6% solution and has long been a standby as a volume expander in clinical emergencies. This particular fraction also aligns itself on cell and intimal surfaces and causes an increase in the electrical repulsive forces. Because of some of the larger molecules, clinical dextran may not entirely inhibit intravascular aggregation of cells, but it will prevent propagation of a previously formed clot and, because of this, it is valuable in treatment of phlebitis.[8, 9] Not only are the physiochemical properties advantageous in thrombophlebitis management but also the increased and diluted volume improves flow and the osmotic effect reduces edema.

In thrombophlebitis, sufficient volume of clinical dextran is necessary to effect a therapeutic benefit. Hence an infusion of 10 cc. per kg. should be given as a loading dose and a dosage of 5 cc. per kg. should be repeated daily until the process subsides or until treatment needs to be changed. This can be accompanied by bedrest with elevation or ambulation, depending upon the severity and type of phlebitis present.

Severity and type of thrombophlebitis are probably the most important factors in determining the method of managing each patient. In treatment of mild, localized, superficial thrombophlebitis, the simple use of an anti-inflammatory agent, such as phenylbutazone (Butazolidin®), and elevation will suffice, with the patient remaining ambulatory and out of the hospital, and usually able to perform his necessary duties. If the phlebitic process involves all or a large part of the superficial system, it becomes necessary to hospitalize the patient and treat with bedrest, elevation, heat and anti-inflammatory agents, heparin or dextran. At this point, the duration of the disease before treatment is started becomes important.

If the inflammatory process is recent and the treatment undertaken early, early resolution with ultimate satisfactory results can be expected, whether heparin, dextran, or Butazolidin are used. If the phlebitis has been present for some time, the resolution will be more gradual, the morbidity more prolonged, and the outlook for good venous function poor. In the early cases, heparin or dextran are not essential, but either will cause a dramatic and rapid resolution. In those seen late, no matter what method of treatment is utilized, the recovery is slow. In these cases we have often chosen to ligate and strip the involved vein in order to shorten the hospital stay and prevent formation of the inevitable varicosities. We also ligate and strip those cases with superficial phlebitis where the process is progressing and threatening to involve the deep venous system.

Recent wide-spread use of indwelling plastic catheters has resulted in superficial phlebitis secondary to the foreign body or to the infused solution. These are usually uncomfortable and of relatively minor importance if they are in the arms, but in the leg they can progress into a full-blown superficial and sometimes deep phlebitis. If the catheter causes a suppurative rather than a chemical phlebitis, the situation becomes more serious. Aggressive antibiotic therapy is then indicated, and it not uncommonly becomes necessary to totally excise the vein, often with unroofing of the entire venous channel.

When the thrombophlebitic process involves the deep veins of the leg, a serious illness exists and the patient must be hospitalized. He must be placed at bedrest and active measures taken to inhibit propagation of the thrombus and to speed its resolution. Simple deep-vein thrombosis endangers the competency of the venous return and carries the threat of pulmonary embolus. Progression into an ilio-femoral thrombosis carries even more potential of morbidity and mortality. Both these conditions are best treated by bedrest and thrombus inhibition. When the massive thrombosis of phlegmasia cerulea dolens, or the so-called blue phlebitis, develops, the patient's life is in danger as well as his limb. This requires urgent and heroic treatment and thrombus inhibition is not enough. Thrombectomy is necessary.

There are patients in whom this severe thrombosis has subsided on heparin or dextran therapy, but they are always left with venous insufficiency. Patients treated by thrombectomy have a dramatic resolution of symptoms and minimal venous insufficiency.

In the milder forms of deep-vein phlebitis, it makes no difference whether dextran or heparin is used—the results are the same. As the disease progresses, it is wise to use both, and when massive thrombosis exists both are not enough, and thrombectomy is indicated. Both heparin and dextran satisfactorily inhibit thrombus propagation and encourage resolution if adequate dosage is used. Depoheparin is not adequate, nor is a single 500 cc. unit of dextran. There are certain situations in which one is preferable to the other, and in many cases both work well together. In some types of postoperative and post-parturient patients heparin is contraindicated because of large bleeding surfaces, neurosurgical procedures, gastrointestinal bleeding, and frequent intramuscular injections. Such patients can be well treated with dextran without endangering their lives or comfort. Obstetrical patients are better handled on dextran both in the prenatal state and postpartum.

Both dextran and heparin have definite disadvantages in their mode of administration: to be effective, both must be given

intravenously. Dextran is given in one infusion, lasting from 2 to 4 hours, but allowing the patient mobility between, while heparin should be given by injection every 4 hours. Heparin needs to be controlled by frequent clotting tests; this is unnecessary with dextran.

A certain number of people are allergic to dextran. While the reaction is usually urticarial in nature, and responds easily to antihistamine threapy, it is uncomfortable and may require discontinuanec of the agent. Since dextran is a volume expander, proper precautions are necessary in people with limited cardiovascular reserve.

While both dextran and heparin have their place in the management of thrombophlebitis, the true challenge lies in proper evaluation of the disease. No drug or mechanical agent can replace the physician's judgment. Each form of thrombophlebitis should be handled differently, and the decision made to fit the treatment to the disease. We fall short by relying upon materia medica to cure the patient, rather than relying upon ourselves to control the treatment. •

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NOTICE OF CORRECTION

In the article, "The Therapeutic Challenge of Advanced Cancer Patient," which appeared in the December issue of this Journal, the following errors have been called to our attention by the author:

On page 43, second column, 9 lines from the bottom, the sentence should read: ". . . and if such criteria *are* lacking . . . "

Page 46, four lines from the bottom in the second column, the sentence should read: ". . . may be given x-ray therapy with the *expectation* of control for many weeks to several months . . . "

Trichobezoars

John Q. Gallagher, MD, Denver

A case report illustrates the diagnosis, surgical operation and psychiatric implications.

Etiology of the word bezoar is not positively known. It is believed to have originated from the Arabic word "bedsher" meaning counterpoison or antidote. Since the twelfth century animal bezoars (for example from goats) have been used as antidotes to poisons and as remedies for such conditions as plague, leprosy and epilepsy. Even in the twentieth century they have been used under the curious name of "mad stones" to counteract poisons and to prevent disease. The first description of a trichobezoar was reported in 1779 and since that time bezoars have become a medical curiosity of some importance, especially among children and emotionally disturbed individuals. To illustrate what proved to be a typical pattern, the following case report is presented.

CASE REPORT

Pamela was a two-year-old white female with a one month history of intermittent abdominal pain often followed, and particularly relieved by, episodes of vomiting. Her mother stated that the vomitus was extremely foul smelling. On close questioning her mother admitted that the child in the past had been noted to pull out some of her hair and eat this, as well as eating bits of animal stuffing and pieces from the curtains. This little girl was one of twins in an apparently normal household of five children. On physical examination she appeared pale and listless. There was a questionable palpable mass in the upper abdomen. Investigations demonstrated an iron deficiency anemia with a hematocrit of 31% and a WBC of 14,000. Complete GI series revealed a large filling defect in the stomach which was best noted on a 3½ hour delayed film.

The patient was hydrated, whole blood administered, and on December 16, 1964, at laparotomy a distended stomach containing a large trichobezoar was found and removed through a longitudinal gastrotomy. The specimen measured some ten centimeters and extended or "tailed" for another nine centimeters into the duodenum. She had an uneventful recovery and was discharged to her home on the sixth postoperative day with a referral to the University of Colorado Child Psychiatry Center. After one year of outpatient treatment there she was discharged. Recent follow-up reveals no further difficulty or history of hair ingestion.

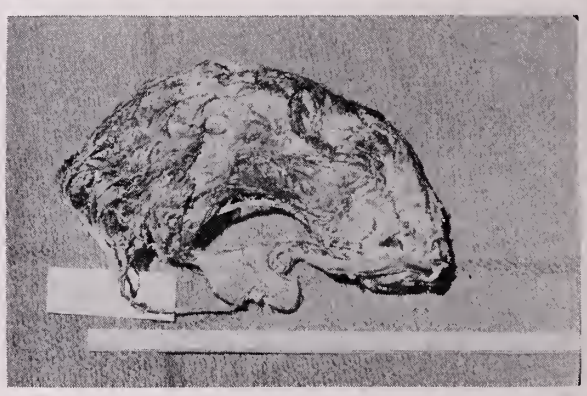

Fig. 1. X-rays of abdomen, 3 hours after barium meal, outlining mass in stomach.

There have been less than 300 cases of trichobezoars reported in the world literature. DeBakey and Ochsner in 1938 reviewed 311 cases of bezoars of which 172 (55.3%) were composed of hair. A review of records at Colorado General Hospital revealed no cases of trichobezoars seen or treated in the past 42 years. There have been, however, a number of cases seen in the community hospitals in and around Denver. Trichobezoars may appear in both sexes, and the age of reported cases ranges from 18 months to 52 years. The great majority occur in young females, and 80 per cent of all reported trichobezoars were in patients less than 30 years of age. Phytobezoars, in contrast, are more common in young or middle aged males. Descriptions of the symptom-complex from them parallels almost exactly that noted in the case above.

The insidious nature of the illness, consisting of vague epigastric pressure and anorexia progressing to signs of partial upper

Fig. 2. Photograph of specimen after surgical removal.

gastrointestinal obstruction, can be confusing. Weight loss, malaise, and an iron deficiency anemia are common. Radiography is helpful in demonstrating that the opaque contrast media flows easily along both lesser and greater curvatures of the stomach and completely surrounds the foreign body. Late films generally show persistent coating of the trichobezoar with barium. Direct visualization and biopsy via gastroscopy might be used if there were doubt as to the diagnosis. Trapping of other foodstuffs and moisture contribute to large size of some trichobezoars. The largest recorded was 6.5 pounds.

Trichobezoar is not an innocuous occurrence. Complications are common and may be severe. Untreated they are reported to carry as high as 70 per cent mortality—primarily from obstruction and ulcer. Gastric retention and increase in motility and acid secretion due to the presence of the bezoar are the precipitating factors in formation of ulcers. Most occur along the lesser curve, and are reported in approximately 10 per cent of cases. Prompt removal of trichobezoars will produce relief of symptoms and healing of the ulcer. Further surgical treatment is generally not necessary.

Although diagnosis is not difficult, and surgical approach is straightforward, operation and removal of the trichobezoar is not the finale in treatment. The condition is basically psychiatric and therapy is only begun with removal of the trichobezoar. Psychiatric approach must begin with an adequate explanation to parents of the emotional causation of the physical symptoms. Eating hair is generally a sign of emotional tension which warrants comprehensive evaluation of child and environment so that underlying stress may be removed or ameliorated. This phase of treatment obviously falls to the psychiatrist. Where the surgeon leaves off, he begins. Trichobezoars, once surgically removed, characteristically do not reappear, although many cases of recurrence requiring surgical removal have been reported.

Conclusion

Diagnosis of trichobezoar is not difficult and can be made largely on clinical examination provided only that the condition be kept in mind. Presence of a large, firm, mobile mass in the epigastrium associated with the characteristic history of pain, vomiting, and hair injestion will suggest the diagnosis, and appearance with barium meal study should conclude the investigations. Anemia is common and complications from gastric ulcer possible. Surgical removal, although definitive for the presenting problem, is only the beginning of therapy. Complete rehabilitation of the patient with assurance of no recurrence of the condition warrants intensive psychotherapy under direction of a psychiatrist. Compulsive eating of hair to the development of a trichobezoar in the stomach is generally a manifestation of the patient's attempt to cope with underlying tensions, usually related to his environment. •

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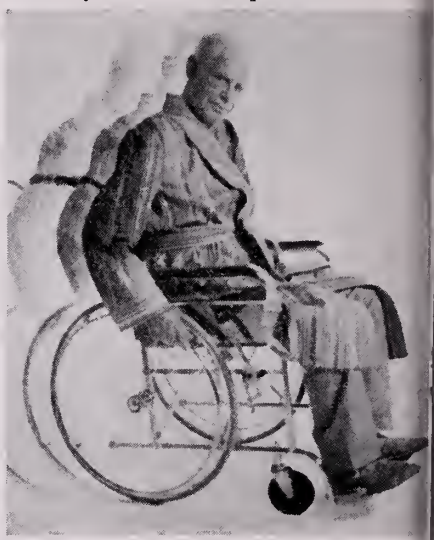

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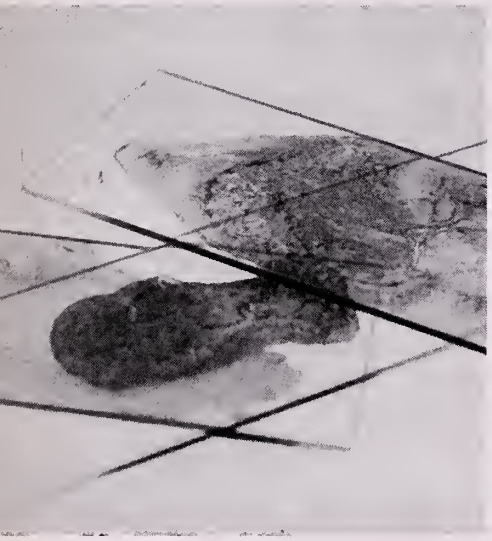

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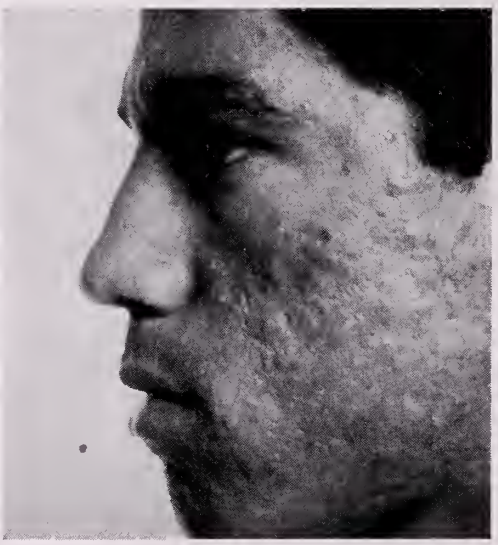

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Peripheral vascular disease*

Medical concepts and misconcepts

Loren F. Blaney, MD, Denver

The common entities of peripheral vascular disease are briefly reviewed, with particular reference to complaint of pain, and with attention to misconcepts of diagnosis and treatment.

THE PRESENTING COMPLAINT of the majority of patients referred to the Peripheral Vascular Disease Clinic is pain, and it is uncommon for the referring physician to further refine his suspicion of vascular disease to the arteries, veins, or lymphatics. The anatomic orientation of the physical examination to each of these systems, as well as to the skin, nerves, bones, and joints, is essential to expeditiously and accurately identify the problem. Physiological changes and pathologic alterations may then be studied, and, most important, the correlation of the limb findings with the associated conditions, which these patients always have, may be established. Seldom can wise judgment be made if the attention is limited to the extremities alone.

Disease of the venous system presents the greatest hazard to life in venous thromboembolism. A high index of suspicion for this entity is essential, for, while hard to prevent, it is responsive to proper treatment. Early signs of venous clotting are subtle, usually in the lower limbs or pelvis, and often not present when pulmonary embolism strikes. The very circumstances around which thrombo-embolism develops may support the diagnosis. Calf muscle rupture or hemorrhage is associated with unusual effort, is sudden in onset, and often followed by ecchymosis about the calf or ankle; incidentally, it is usually the gastrocnemius rather than the plantaris. Acute myositis is more usually bilateral. The signs of lower limb thrombophlebitis then, are unilateral, mild pain and tenderness of calf muscles, often confusingly near the Achilles tendon. Increased firmness of one calf can be appreciated in the supine patient if the knees are flexed to permit relaxation of the posterior leg muscles. As the clot propagates from the sural into the popliteal veins, prominence of superficial veins appears, along with pretibial or calf edema. Palpation of the veins in the popliteal space, in Hunter's canal, and in Scarpa's triangle takes precedence over measurements of calf circumference, tenderness elicited by the inflated sphygmomanometer cuff, or Homan's sign. Gross, acute, unilateral limb edema is practically always due to ilio-femoral vein thrombosis.

The variable signs and symptoms of pulmonary embolism include apprehension, dyspnea, pain of any severity and any location in the thorax (but usually not pleuritic), signs of acute pulmonary hypertension, and such misleading findings as gastro-intestinal symptoms, mental symptoms, ocular palsies, and convulsions. Death, while seldom sudden, as in myocardial infarction, may occur at any time, and it more likely results from the subsequent emboli when the herald attack was not appreciated and proper treatment was not employed. Remember that embolism is not synonymous with infarction. Embolism, more often multiple, may or may not be followed by infarction after a delay of two or three days. Infarction is often mistaken for pneumonia and unwisely treated only with antibiotics without benefit of bacteriological study. Thrombo-embolism per se, is not an infectious disease; septic thrombo-embolic disease is rare.

Thrombo-embolic disease is a true emergency, and intravenous heparin is specific. Blood may be drawn for a clotting time, but it is not wise to delay heparin for the laboratory report. About 75 mgs. (1 mg/kg/body

*Presented at the 96th Annual Session of the Colorado Medical Society at Colorado Springs, Sept. 27, 1966. From the Department of Medicine and Peripheral Vascular Disease Clinic, University of Colorado Medical Center, Denver, Colorado.

weight) intravenously will stop the clotting process immediately and natural fibrinolytic activity will lyse a fresh clot. All other measures are distinctly subordinate to heparin, of little value, and occasionally harmful—the injudicious use of heat as packs or cradles not only tucks the disease away, discouraging frequent examination, but the associated immobility sets the stage for thrombo-embolism in the opposite limb. Should occlusive arterial disease also be present, the diminished blood flow may be inadequate to dissipate the excessive heat and thermal burns ensue. Intermittent intravenous heparin is then the therapeutic drug for 10 days, and coumarin is the prophylactic drug for 100 days—coumarin and other prothrombinopenic drugs are prophylactic rather than therapeutic.

Occlusive arterial disease is frequently asymptomatic even with the absence of posterior tibial artery pulsations. The dorsalis pedis pulse is absent as an anatomical variant in as high as 10% of some series of young adults. Lateral palpation will often disclose an extension of the peroneal artery as the dorsal artery of the foot. When obstruction is of sufficient degree, blood flow will not meet the metabolic requirements of an extra effort, and weakness or pain will appear. Intermittent lameness or limping of horses was first shown by Bouley in 1831, to be due to occlusive arterial disease of the limbs, and labeled intermittent claudication. This veterinary symptom has come to be diagnostic in human medicine. It is not present at rest, upon standing, or upon minimal walking, but occurs after a remarkably reproducible degree of muscular effort. It may occur in the low back, hip, thigh, leg, ankle, or foot, and be confused with musculo-skeletal strains, arthritis, protruded lumbar discs, fallen arches, plantar neuromas, osteoporosis, and tight shoes. It is always associated with absent or greatly diminished arterial pulsations. Occlusive arterial disease is no threat to life, very little to limb, and commonly of little inconvenience to the patient. It is nearly always due to artherosclerosis, and it is frequently associated with diabetes and/or hypertension. The degree of focalization of this generalized disease in the arteries serving the heart and brain determine the mortality and morbidity and should, therefore, determine the appropriate therapy. The medical regimen, par excellence, is walking short of tolerance several times daily. The anoxia-induced local vasodilating substances have no peer on the pharmacist's shelf. Prophylactic foot care should be emphasized over and over again, and printed instruction sheets should be memorized by both patient and his caretaker.

The pain of ischemic neuritis, also called rest pain or pretrophic pain, and often associated with ulceration and gangrene, is persistent, severe, spasmotically accentuated, nocturnal, demoralizing, and intractible. Accompanying the pain of ischemic neuritis, there may be an associated sympathetic nerve dystrophy, frequently described as burning paraesthesia, and characterized by painful hyperaesthesia of the part. Temporary interruption of sympathetic activity by intra-arterial priscoline or para-vertebral sympathetic nerve block commonly, although briefly, modifies this component of the pain complex, leaving a residual somatic pain which is tolerable. Thus demonstrated, this becomes a major indication for sympathectomy. Ethyl alcohol, flavored as desired, and the usual analgesics and vasodilators afford variable palliation. Trial and error has suggested many other remedies of which tolbutamide (Orinase), griseofulvin, and low dose corticosteroids have on occasion been effective. The pain of ischemic neuritis is severe, and narcotics need not be spared to control it in the usual elderly patient.

Severe or moderate pain cannot be attributed to incompetent varicosities or the post-phlebitic syndrome in the emotionally stable patient. Rather, these conditions are either asymptomatic, or give rise to fullness and dulll aching sensations upon prolonged standing. Appropriate supports below the knee alleviate this discomfort.

Cold feet result from normal physiological arterial vasoconstriction to conserve central body heat. Abnormal coolness, with or without excessive sweating, is a distressing symptom and may be accompanied by reduced arterial pulsations of increased vasomotor tone. Cold feet may be a manifestation of

peripheral neuropathy; the sensation is then subjective, and there is no evidence of decreased blood flow. Even more proximal neurological lesions in trunk, root, or cord may cause subjective cold sensations suggesting a vascular etiology. To be sure, there is evidence that obstructive disease of the microcirculation is involved in the neuropathies of diabetes. However, Dolman's neuropathological studies emphasize the frequency of degenerative changes in myelin sheaths in peripheral sensory nerves, and the lack of correlation with changes in the small blood vessels. The ischemic diabetic foot often presents bounding posterior tibial arterial pulsations, ischemia being caused by occlusive disease in the micro-circulation. The incidence of sensory peripheral neuropathy increases with aging per se, and is commonly associated with decreased carbohydrate tolerance. With overt diabetes, a much greater incidence is recorded.

The entrapment of a nerve and its compression by an anatomic variant of the musculo-skeletal system, congenital, developmental, postural, or post-traumatic, causes mechanical irritation and inflammatory response ranging from exudation and swelling to degeneration and atrophy. The nutrient artery may be compressed and cause ischemic neuropathic changes. Then, too, adjacent blood vessels, as in the thoracic outlet syndrome, may be compressed. Paresthesia, numbness, and tingling are common to both neurologic and vascular compression. The majority of cases are mild, and the subjective complaints are seldom localized to either nerve root, trunk, or branch, distribution. The dysesthesia may be either retrograde or prograde to the lesion. With development of objective patterns of hypesthesia, paresis, and muscle atrophy, diagnosis becomes more definitive. Irritation of the sympathetic efferent nerve components causes vasospasm with its consequent and variable coldness, cyanosis, and pallor. Vasospasm, per se, does not produce necrosis.

Restless legs, also called Ekbom Syndrome or Anxietas tibiarum, is a puzzling, subjective sensory neuropathy encountered in severe to mild form in 5 per cent of the population, many of whom are seen in the vascular disease clinics. The discomfort is bilateral, deep, and characteristically appears toward evening and at night. It involves thighs, arms, and hands, less commonly. The sufferer is forced to arise from his bed and pace the floor for relief. The majority describe the sensation as crawling, creeping, and itching; but a few complain of aching. The symptoms may appear following prolonged sitting during the day and be confused with radiculopathy, herniated discs, sciatic neuritis, varicose veins, etc. While physical and neurologic examinations are characteristically normal, mental status examinations often demonstrate chronic anxiety and depression. In some instances the pre-existence of abnormal mood patterns prior to onset of the restless legs syndrome can be documented. Reduction in impulse transmission velocities in the peripheral nerves has been demonstrated. Associated conditions have been pregnancy, uremia, iron deficiency, nutritional diseases, cold exposure, and phenergan and compazine administration. Analgesics, sedatives, and placebos are variably effective. Search for the many associated or causal conditions of peripheral neuropathy sometimes yields the etiology and a more remediable disease.

Other causes of peripheral neuropathy include heavy metal toxins, non-metal toxins, bacterial or viral or treponemal infections, allergy, vitamin deficiency, endocrine and metabolic diseases, neoplasms, and, yes, macro- and micro-peripheral vascular occlusive lesions associated with, and complicating, various diseases currently classified with hypersensitivity and self-rejection phenomena. Even the mushroom hunter who washes down his inky caps (coprinus atramentarius, to you) with spiritous drinks, may develop flushing—the tasty little dung dwellers, resenting the alcoholic intrusion, carry their own antabuse. •

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Lead poisoning*

Ralph T. Richards, MD, Salt Lake City

Regional history is an appropriate facet of our regional medical journal. This story is of significant interest in the territory which we serve.

WHILE INVESTIGATING, from the hospital angle, the prevalence of lead poisoning, a fifty-year panorama of the early mining development of Utah is revealed. A series of triumphs and failures dominates the picture. Great producers flash across the scene, fill the owners' pockets with dividends and vanish, with nothing remaining but dumps on the hillsides and holes in the ground. Every mining camp in Utah tells that tragic story.

Every normal person carries a few milligrams of lead in his body. It is constantly introduced through air, water, and food. It is never allowed to accumulate to the point of causing symptoms as elimination, principally by the kidneys, prevents the backing up of dangerous amounts. However, when an individual is exposed to an abnormally large amount of the metal, as in the lead industries, the lead accumulates in the body in quantities sufficient to cause lead poisoning. In the United States, one authority[1] lists lead poisoning still as the most important of industrial diseases, although the relative frequency of occurrence has dropped considerably in the last fifteen years. Mining and smelting—so active in Utah—are the most dangerous of the lead industries from the standpoint of lead poisoning.

Review of over 20,000 diagnoses listed in the records of the St. Mark's and Holy Cross Hospitals reveals over 6,000 cases of lead poisoning between 1872 and 1903. It was the most frequent disease recorded by the hospitals. Such deplorable conditions have never been duplicated in the United States, although Mexico has several mining areas as dangerous as those in Utah.

In an attempt to evaluate the importance of local lead poisonings, all sources of possible information were investigated. Unfortunately, there are no existing records of early mines and smelters. Some significant data were obtained from mining and smelting officials and camp physicians active in the 1890's and during subsequent years. Since such information was not definite enough for reliable statistical analysis, the author has had to fall back on the hospital records, while acknowledging that they do not tell the whole story. This seems to be the time to place on record Utah's unique experience, as no similar report has ever been published. One large part of the sources has been destroyed, so that it is impossible to make another compilation more complete than the one that follows.

Lead poisoning is entered in the admission books of the Salt Lake hospitals under several headings: Lead poisoning, lead intoxication, plumbism, lead colic, lead paralysis, lead palsy, lead delirium, and lead paralysis of the brain. Because of the frequency with which the diagnosis had to be written, the clerks usually wrote "Lead" or "L. P." While abbreviation saved time, the Holy Cross clerks went still further and omitted to enter any diagnosis opposite the names of 384 patients from the lead mines and smelters. These omissions were during the most active years of lead production, 1884-87.

Before lead can produce poisoning, it must be absorbed into the circulation where it is distributed throughout the body. It can cause temporary or permanent symptoms affecting all the systems of the body—circulation, muscles, nervous system, bones, liver, kidneys, and digestive organs. There are three bodily portals of entry for the dusts in the mines, and dust and fumes in the smelters.

*This is Chapter II from Dr. Richards' book published by the University of Utah Press in 1953, under the title "Of Medicine, Hospitals, and Doctors."

[1] Russell L. Cecil, *Textbook of Medicine*, 5th ed., 1940.

Lead can be absorbed from the alimentary tract after the ingestion of lead-impregnated food. This lead is the least dangerous because after absorption most of it is removed by the liver and harmlessly excreted.

The skin is the second most dangerous portal of entry. Lead is readily absorbed from the body surface. In the days when lead poisoning was most prevalent, the miners worked twelve hours a day underground. No baths were sytematically taken for cleanliness; there was no forced ventilation to remove the dust. The clothes worn by the workers became impregnated with lead ore dust and were seldom changed. Under those conditions the victim was exposed to lead absorption twenty-four hours a day and frequently succumbed to poisoning. The smelter workers were not only exposed to dust, but in addition were placed in contact with lead fumes that were equally liable to absorption through the skin.

The lungs are the most dangerous portal of entry. The dust and fumes, passing immediately into the general circulation, are distributed to all the organs of the body to produce damage in accordance with the amount delivered.

The physiology of lead poisoning was little understood in the early days of Utah mining when the disease was most prevalent. It was known that a man who had absorbed too much lead might suffer from a variety of symptoms that were weakening, disabling, distressing, or painful. The doctors treating the disease had no microscopic or chemical tests to aid in diagnosis or to determine the degree of toxicity. Diagnosis and treatment were based solely on symptoms.

In the early days it was known that a lead victim was usually pale. The reason for that clinical sign is now known. The blood is definitely affected by lead, which diminishes the amount of iron in the red corpuscles and produces anemia. Some of the red corpuscles undergo a granular degeneration called "stippling." Microscopic counting of the stippled cells gives an index to the amount of lead in the system. Damaged blood loses a part of its oxygen-carrying power and weakens the individual affected. This test is periodically applied to workmen in lead fabricating plants; when significant stippling is found, the workmen are removed from a lead environment to avoid intoxication.

The nerves that control the muscles are occasionally affected by plumbism, causing paralysis of selected muscle groups. In order of occurrence of these paralyses come the wrist, "wrist drop"; next, the ankles, "ankle drop"; and finally, the muscles of the shoulders. Although paralysis may be permanent, as a rule recovery comes in six to eight months. In the old days a second attack of paralysis was usually permanent; under modern treatment, however, a man may have two or even three attacks of paralysis and still be returned to normal.

The brain may be affected, resulting in acute delirium and occasionally actual insanity or death.

Abdominal colic is the most frequent symptom in cases of acute lead intoxication. The pain may be severe, lasts several days, and is accompanied by stoppage of the bowels. A dark "lead line," showing a bluish discoloration at the junction of the gums and teeth, is an important sign, most frequently observed among workmen with pyorrhea. This discoloration may appear before other symptoms are manifest, a warning that the workman should be removed from a lead environment.

The symptoms of the "lead" cases treated in the Salt Lake hospitals followed closely the pattern laid down in the immediately preceding paragraphs. The "lead line" was frequently observed, delirium and insanity rarely. Muscular paralysis occasionally occurred, mostly among smelter workers. For some unexplained reason, it was hard to keep paralysis victims from returning to work before recovery. In an attempt to overcome "wrist drop" attendants rigged up most ingenious home-made apparatus with rubber elastic bands as substitutes for the paralyzed extensor muscles of the wrist. These amateur appliances were quite effective.

Lead colic was the symptom that brought most of the lead poisoning cases to the hospitals. Many of the victims were in great pain and had a stoppage of the bowels. The treatment—morphine for the pain, cathartics for the bowels—was aimed at overcoming

those two symptoms. As a rule six to ten days elapsed before the patients were comfortable. When they were asymptomatic, they were usually discharged as semi-invalids with two to four weeks of disability before returning to normal employment. One mine superintendent operating in the 1880's said that many miners returned to work before full recovery; recurrence of the disease was frequent among that group.

It was common practice to supplement the morphine and cathartic medication with large doses of potassium iodide because of an unsupported theory that lead iodide was readily soluble and would hasten excretion of the lead. Later, common salt was given on the supposition that lead chloride was more soluble than the iodide. During the early 1900's the author's personal observation of treatment of many cases of plumbism from the Park City mines found no evidence that the medication was beneficial.

The effective modern rational treatment of lead poisoning is based on calcium chemistry. Calcium is a substance present in all the tissues of the body and very abundantly in the bones. It is the lime that gives strength to bones. Experimental workers demonstrated that lead and calcium have an affinity for each other, a sort of Ruth and Naomi compact—"Whither thou goest, I will go, and where thou lodgest, I will lodge." Physiologically, this solved a serious problem. Previous observation had revealed that when excess calcium is taken into the body, it is quickly deposited in the long bones. If lead is also present, it is picked up by the calcium and both substances find a resting place in the bones, where the lead is inert as far as producing symptoms is concerned. To make this process more rapid, lead cases are fed milk and eggs and certain vegetables, all containing large amounts of calcium, and a solution of calcium is injected into the blood. Within twenty-four hours a patient so treated is usually free from symptoms. Many industrial physicians treat lead poisoning with injections of sodium thiosulphate with excellent results. Although several other drugs are in use, they are inferior to those mentioned.

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of lead poisoning, there have been greater advances in prevention. These have been brought about by coordinated work among all departments of the fabricating plants and mines, principally the laboratories, plant designers, safety engineers and industrial physicians. Detailed discussion of all the safety measures they have found effective is impossible here. In the Utah area, generally speaking, most of the mines and smelters were backward about utilizing modern safety measures, but still did a fairly good job. Leasers had the highest per capita incidence of lead poisoning because they ignored the safety measures introduced by the operating companies.

In 1941, when the State of Utah realized that the miners and smelter workers in the State were not being fully protected, the legislature passed the "Occupational Disease Disability Law." Since the passage of that law, operating companies have been forced to avoid legal responsibility by bringing their prevention programs up to modern standards. In September, 1951, a member of the Industrial Commission of the State of Utah said: "Following the enactment of the Occupational Disease Law, there was a marked diminution in the number of lead poisonings and now the Commission rarely has any cases coming up for adjudication." The hospital records show a like diminution since 1941.

An effort to obtain statistical information of Utah experience was partially successful. One company permitted access to their files from 1914 to 1951. This company averaged 126 lead poisonings a year from 1917 through 1930. In 1930 their plant was redesigned for efficiency and safety. From 1931 to 1950 the annual incidence was less than three, a splendid demonstration of one effective method of prevention.

A safety engineer of twenty-five years' experience, including supervision of one lead smelter and several mines in this area, prepared the following list of the preventive measures adopted by his company. He stated that several other corporations in Utah had introduced similar programs.

1910. First safety measures. Established lunch rooms and advised workmen to wash their hands before eating. This was not compulsory.

1912. Abandoned all dry grinding of complex ores.

1915. Change rooms and bath houses. Not compulsory until 1920. After that date, workmen had to bathe after each shift and wear clean clothes on resuming work the next day.

1920. Gave respirators or "masks" to the workmen, most of whom refused to wear the uncomfortable appliances, thus thwarting their effectiveness.

1930. Instructed their employees exposed to lead to "drink lots of milk"; administered daily medication of calcium gluconate to drive the lead into the bones.

1935. Introduced periodic stipple cell counts.

1940. Began the use of high velocity fans and vacuum suction to remove dust and smelter fumes.

1941. Made periodic chemical examination of urine for the early detection of excess lead.

The engineer who furnished the above data admitted that his company was tardy in adopting other safety measures until compelled to do so after the passage of the Occupational Disease Act of 1941.

In the absence of records of the known diminution in the number of lead poisonings since 1915, it is difficult to estimate the effect of the various preventive measures introduced. It is known that they were markedly beneficial, but true measures of their efficacy are a matter of guesswork.

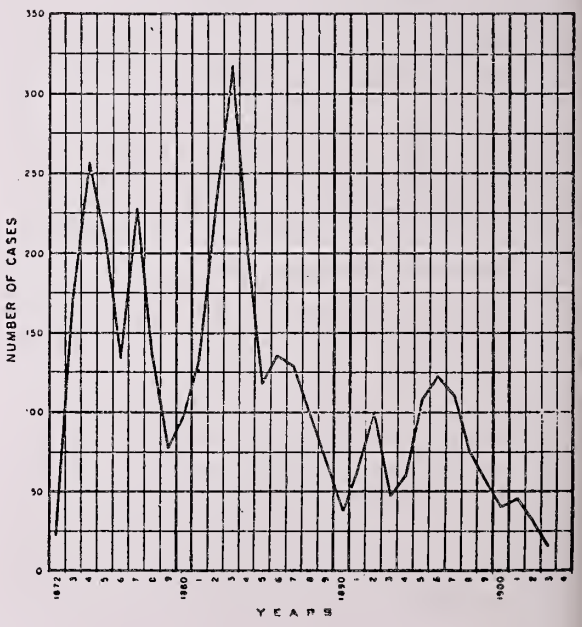
Up to this point we have attempted only a brief non-technical discussion of the gener-

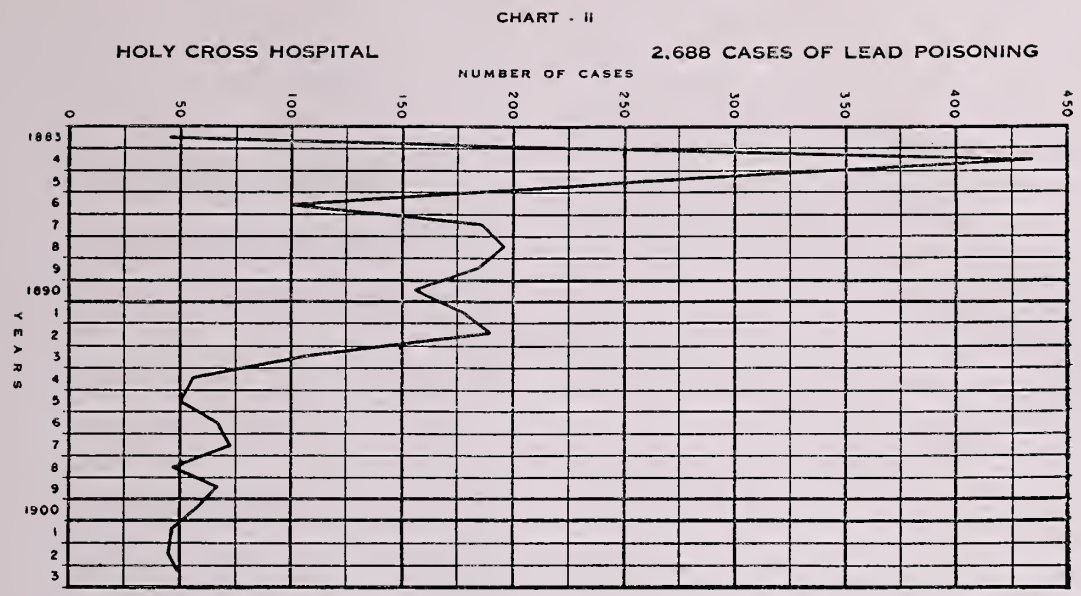
LEAD POISONING

CHART-1

ST. MARKS HOSPITAL

3,706 CASES OF LEAD POISONING





alities of lead poisoning to enable the general reader to appreciate the significance of the great outbreak of the disease in Utah. The information about to be tabulated was compiled by inspecting every diagnosis entered in the admission books of St. Mark's and Holy Cross hospitals from 1872 to 1903 inclusive. This period will be discussed as a separate entity, to be followed by consideration of a second period covering the years from 1904 to 1950.

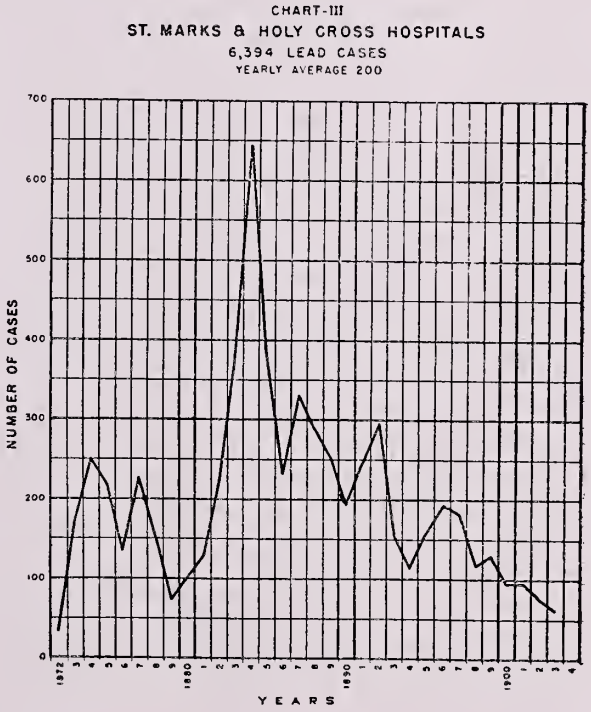
First period, 1872-1903

St. Mark's Hospital was the only institution in Salt Lake City with any records of lead poisoning from 1872 to 1884. Thirty-nine hundred twenty patients were admitted, 2,030 were suffering from some form of plumbism, an average of 170 cases a year.

Chart I shows the total lead poisoning census of St. Mark's from the beginning to the end of the hospital's continuous records. The figures thereon will be used in a later summary.

Chart II deals with the situation at the Holy Cross Hospital. That institution admitted a few cases of lead poisoning during the latter part of December, 1883, when the new building was finished. In 1884, when it was in full operation, several of the mines and smelters routed their patients to the Holy Cross instead of to St. Mark's.

Chart III, a combination of I and II, gives a more definite idea of the chronological occurrence of plumbism than do the records of the separate hospitals. The most striking feature of the chart is the peak of 641 cases in 1884. The upcurve started in 1882, with the opening of the Horn Silver Mine near Frisco, Utah, aided by the Old Telegraph and Lead mines of Bingham, Utah. During 1884 the Horn Silver had 169 lead poisonings and the Germania Smelter, which processed the Horn Silver ores, 153, making a grand total from those two sources of 322. If this figure were deducted, the peak on the chart would disappear.



The totals on the charts do not tell the whole story. The Holy Cross records from the beginning of the hospital in 1875 to December, 1883, were not preserved. When the new hospital was dedicated in December, 1883, the Salt Lake *Tribune* announced that "3,500 cases had been treated in the old hospital." Its principal function was to care for the mining and smelting casualties. During the period, 1875 to 1883, 50 per cent of the cases entering St. Mark's were leaded. It is reasonable to assume that a similar proportion of like cases, approximately 1,750 in number, patronized the Holy Cross.

From 1884 to 1887, 384 male patients from the lead mines were treated at the Holy Cross, but no diagnoses were recorded. All of these were probably "lead" cases.

Combining the three figures in the above paragraphs:

Table I

Number of cases on Chart III	6,384
Probable cases, Holy Cross, 1875-83	1,750
Omitted diagnoses, Holy Cross, 1884-87	384
Total	8,518

Further analysis is necessary to round out the picture. Dr. William Donaher, who practiced in Park City in the 1890's, told me in 1946: "There were four physicians in the camp. About all we had to do was to treat lead poisoning. We could take as good care of them as they could in Salt Lake and never sent any patient to the hospital unless he requested it or the attack was very severe. Well under 10 per cent were treated in Park City." Dr. F. E. Stroup of Bingham who started to practice there in the 1890's said that "about 10 per cent" were hospitalized. Dr. Steele Bailey of Eureka thought the number not over five per cent. These three physicians were careful observers and their opinions reliable. To be on the safe side we accept 10 per cent as the proportion of hospitalizations. On that basis of calculation, Utah probably had over 85,000 cases of lead poisoning before 1904.

Second period, 1904-1950

No effort was made to continue the study of lead cases in the hospitals after 1903, since, beginning with 1904, eight years of the admission books of St. Mark's Hospital were destroyed by fire. The estimate appearing below is based entirely on hearsay and on the more or less reliable memories of five smelter officials, nine mine and smelter physicians, and ten mine operators covering the period from 1900 to 1945.

Table II

Smelter No. 1	1,800 cases
Smelter No. 11	1,650 cases
Smelter No. III (complete records)	755 cases
Park City	2,500 cases
Bingham	3,500 cases
	10,205 cases

Adding that number to the estimate of Period No. 1 brings the total to 95,000 cases of lead poisoning. That figure is not final. The Emma mine, most active in 1869-71, must have had innumerable unrecorded cases of lead poisoning as the miners worked through a single tunnel in dry, dusty, dangerous carbonate ores to which they were exposed twelve hours a day. Four mines in the Tintic district were big producers in 1870-72, but no records exist. The seven Jesse Knight mines in Tintic district produced $10,000,000 in dividends. These properties were so dangerous from the standpoint of lead poisoning that the Superintendent, E. F. Birch, said he never allowed a miner to work in ore more than a month at a time because if he stayed longer, he was almost certain to get "leaded." Mr. Knight maintained a smelter that was active for several years. A Eureka physician said that all the smelter workmen who stayed on the job for a few months suffered from plumbism. Mr. Knight sent his cases, when necessary, to a Provo hospital—no records. Much further evidence of unrecorded lead poisonings can be offered, but enough is here presented to justify the opinion that there probably have been in excess of 100,000 cases of lead poisoning in Utah.

The sharp decline in the number of lead poisoning cases by 1904 is graphically depicted on Chart III. There were two causes for the decline:

1. *Change in the character of the ore mined.* This gets to the very heart of the problem. There were many mines with rich silver ore carrying a high percentage of lead. From five to seven hundred feet beneath the surface, the ground was dry, and mining and

mucking created a large amount of dust. The lead in the dust was in the form of carbonates, the most soluble common form of lead ore and, therefore, the most readily absorbed. As the mines went deeper, they changed from "dry" to "wet." The wet ores were mostly sulphides and could be worked with little dust, which was more insoluble than the carbonates, less readily absorbed, and, therefore, less inclined to cause plumbism.

2. *The price of silver.* During the first thirty years of Utah mining gold, copper, and zinc were not profitable. Lead was so cheap (averaging from three to four cents a pound) that it was not sought after primarily, though as a byproduct of silver mining it had considerable value, especially near the surface where high percentages frequently prevailed. The high price of silver furnished the incentive for the opening of most of the mines in the 1870's and early eighties. In 1873 an ounce of silver sold for $1.298, but steadily declined in price to $1.064 in 1884. In 1885, the price was $1.053; the next year it was $0.99, but steadily declined to $0.511 in 1915, and never rose above one dollar until 1909. We are not, however, interested in these later years, but only in the period from 1886 to the end of the graphic curve on the chart in 1903. The price during the last eighteen years averaged $0.73. With the decline in price, many, except the richest mines, closed down. Diminished numbers of lead poisonings followed.

During the compilation of the data upon which Chart III is based, every case of the 6,394 lead poisonings was tabulated according to the mine or smelter where it originated. Two hundred and four mines and fourteen smelters contributed to the tragic record. The following table records the names of the principal offenders:

Table III

	Cases	Totals
Park City		
Silver King	218	
Daly	203	
Ontario	178	
Crescent	117	
		716
Bingham District		
Brooklyn	190	
Yosemite	182	
Old Telegraph	169	
Spanish Mine	91	
Lead Mine	61	
Old Jordan	58	
Mayflower	20	
		771
Tintic District		
Bullion Beck	161	
Eureka Hill	141	
		302
Alta District		
Flagstaff	63	
Prince of Wales	56	
Reed & Benson	43	
		162
Ophir District		
Hidden Treasure		34
Stockton		
Honorine		96
Frisco		
Horn Silver		852
Fourteen Smelters		1,374
Total		4,307

The above summary leaves 186 mines unaccounted for. They had 2,087 poisonings, an average of eleven each—none of them over nineteen. Small producers composed this group, and most of them operated only for a limited period. •

History of the practice of obstetrics in Utah*

Eugene Wood, MD, Salt Lake City

You will enjoy this fascinating historic sketch of one of the most romantic periods in western medicine.

In 1950, Doctor Vernon Ward of Ogden, Utah, presented to this society a history account of the practice of obstetrics in Utah. Doctor Ward's discussion was concerned with methods of practice involved in midwifery, home delivery, and later hospital obstetrics. There is no one in the State better qualified to talk on this subject, since Doctor Ward has personally seen all three types of practice, and he has masterfully discussed them in his paper. I would recommend it to any of you who are not familiar with it.

The present presentation attempts to describe the practice of obstetrics in Utah and its practitioners, from the Indian midwife to the present-day obstetrician. I have had access to the Utah Historical Society Library, the Utah Room at the University of Utah, and the Latter-day Saints Hospital Archives in order to obtain the material for this paper. I am deeply indebted to Doctor Everett L. Cooley of the Historical Society for the kind of help he has given me.

The practice of medicine and obstetrics is so closely interwoven with the early history of Utah that it has been necessary to include some history of the Mormons and other early settlers of Utah. Before Mexico cast off Spanish rule and became politically independent, Utah was part of the Spanish possession in the New World. Spaniards were the first explorers of the present State of Utah. The first extensive exploration was made by Escalante and Domingues, Spanish Padres, seeking an overland route to the Pacific coast in 1776. Crossing southwestern Colorado, they entered Utah at a point where the Grand River enters the state and continued across the Green River. Following an Indian trail, they crossed the Wasatch Range and descended Spanish Fork River until they reached the southern shores of Utah Lake. Here they camped and preached to the Indians. They heard of a lake to the north but did not visit it. They directed their course southwesterly, crossing the Sevier Desert. The party then became disgruntled and returned to Santa Fe, never having reached California. In 1830, three separate bands of trappers covered essentially the same course.

Discovery of Great Salt Lake

In 1811 and 1812, northern Utah was explored by Miller, Hobach, Robinson and Rezuer. They detached themselves from an overland expedition sent by John Jacob Astor to trap in Eastern Idaho. Credit is usually given Jim Bridger for discovering the Great Salt Lake. He came to Utah with a trapping expedition sent by William Ashley of St. Louis, Missouri. This party divided into detachments and Bridger accompanied a group which wintered on the shores of the Bear Lake. Etienne Provost accompanied a group which is said to have camped in the Great Salt Lake Valley. Hence, it is possible that Provost may have been the first white man in the valley. In 1825, Bridger, when seeking the mouth of the Bear River, found a body of salt water which he believed to be an arm of the Pacific Ocean.

It is difficult to determine who first informed Brigham Young of the Great Basin Territory, or how accurately. Whether Young charted his course by means of supreme faith

*This manuscript is a recapitulation of remarks made to the Utah Society of Obstetrics and Gynecology in the winter of 1962. Prepared for publication by Thomas H. Kirschbaum, Secretary of that Society.

in a divine guiding Providence or by some more material means, he directed his route with the skill of a surveyor or civil engineer. On July 24, 1847, with a party of 143 Mormon pilgrims, he entered the valley of the Great Salt Lake. This same year, on May 7 the American Medical Association was organized in Philadelphia. Gold was discovered at Sutter's Mill near Sacramento in California in 1848, and the gold rush of 1849 brought immigrants and gold seekers through the valley in considerable numbers.

On February 2, 1848, the war with Mexico ended, resulting in the Territory of Deseret becoming a part of the United States. Shortly thereafter, a petition for statehood was submitted to The Federal Government but was refused. Instead, the Territory of Utah was formed September 28, 1850, and since Brigham Young had been elected Governor by its habitants, he was appointed Governor of the Territory by Millard Fillmore, then president of the United States. Finally on January 4, 1896, Utah became the 45th State of the Union.

Indian medicine

Indian medicine, of course, was the first type of medicine practiced in Utah and fairly reliable accounts of it have come down through history. The medicine man was the only doctor available to the Indian and was called only for specific types of illness. Indian theory taught that all sickness was caused by evil spirits—little devils that afflicted and tormented man. The job of the Indian practitioner then was to drive these demons away—to eject them forcefully if necessary from the sick or so to harass them they were only too glad to vacate. Often the medicine was so repulsive that no self-respecting devil would remain in its presence. The Indian doctor relied upon his mystic chant to drive or entice these spirits away. The chants or songs were originally given him by spirits, but experience and experimentation had to determine whether said spirit was a good or bad fellow. A tree must be judged by its fruit, and in that time, before more temperate white man's laws interfered, a doctor found to be dispensing bad medicine was tortured to drive out his evil enchantments, or even put to death.

Although the medicine man was not present at the confinement of an Indian mother, there were prescribed rituals which the mother and father had to conduct before the baby was born. The Paiute God, Shinob, pronounced a decree of pain and sorrow upon women, but he also promised that they should be preserved in child bearing. To this end he gave rules to the Indians which were to be observed by both parents during pregnancy and in the period of purification which must follow. The mother was to refrain from eating meats and fats, particularly during her last weeks antepartum. She was to live on vegetables, greens, roots, nuts, and bread made from any of the seeds. Her foods were to be solely produced by and out of the earth; she was to drink only cold water.

In preparation for confinement, a small closed shelter or tent was set up at a distance from the camp. A hole about ten inches deep and as large as a bed was dug in the center of the floor; a pile of smooth rocks was collected nearby. When labor began, a fire was built over the rocks and they were thoroughly heated and transferred to the hole inside the tent. Green brush and boughs were laid three to four inches deep over the hot rocks and the woman's bed was placed thereon. Her drink was then changed to hot water, of which she generously partook. The application of heat in this manner, both inside and out, was to relax the muscles. Up to this point, the husband made all of the preparation, he then relinquished responsibility to the midwife. For several days after the baby's birth, the husband was to remain nearby, but outside the tent. He was to put a round rock under his head for a pillow so that if he dozed off too soundly, his head would roll off and he would awaken. For at least two weeks postpartum, both mother and father were to eat no meat or fat. They were to live on plant foods, and for a full moon, one month, to drink only warm water. At the end of this time, the purification bath was given to both and normal sexual life was resumed.

Mormon opposition to doctors

It is easy to understand why there were no qualified doctors in the territory for several years after the arrival of the pioneers

when one realizes the persecutions and privations to which the Mormons were subjected. Then, too, Mormon belief was such that the leaders were opposed to the people consulting doctors for help in case of sickness. If one became ill, he was to be treated by the ministrations of the brethren of the priesthood. There are records of speeches by Brigham Young discouraging the brethren from seeking secular help when they were sick. As a result, the only doctors who accompanied the pioneers from Nauvoo, Illinois, to Winter Quarters on the Missouri River were "Thompsonian Doctors."

These practitioners were disciples of Samuel Thompson, a self-taught herbalist, born in 1769. His concept of pathology was that heat is a manifestation of life and that cold is the cause of all disease. "All disorders arise directly from obstructed perspiration, which is always caused by cold or want of heat." In essence, the Thompsonian system for treatment was as follows: 1. Cleanse the body with emetics and enemas. 2. Restore lost heat by cayenne pepper internally, hot pads and steam externally. 3. Carry away the residue of "canker" by doses of bayberry, sumac and red raspberry. Thompson died in Boston in 1843 at the age of 75 and his son carried on his work. Hundreds of botanical, eclectic, and physiomedical sects sprung up as a result of these teachings. Those interested could receive training and a diploma for $20.00 from a Thompsonian School.

Three Thompsonian physicians who entered the Salt Lake Valley with the first pioneers were Samuel L. Sprague, and Levi and Willard Richards. Doctor Sprague was personal physician to Brigham Young and accompanied him on all of his trips. Willard Richards was a cousin of Brigham Young and was incarcerated with Joseph and Hyrum Smith when they were martyred June 27, 1844, in Carthage, Illinois. Willard Richards was a distinguished leader in both church and civic affairs and at the time of his death March 11, 1854, at age 50, was one of the members of the First Presidency of the Latter-day Saints Church, General Church Historian, President of the Legislative Council, Postmaster of Salt Lake City, Recorder of Marks and Brands, Chairman of the Board of Education, Chairman of the Council of Health, and Editor of the Deseret News. He published the first issue of that paper June 15, 1850, in Salt Lake City.

Difficulties of early physicians

To further illustrate the attitudes of the Mormon Church toward trained physicians, the following is quoted from the Deseret News of September 18, 1852, as written by its editor, Doctor Willard Richards:

> Two physicians have removed to one of our more distant settlements and have gone to farming; three more have taken to traveling and exploring the country; three have gone to California to dig for gold or some other purpose; and one has gone to distilling, so we are beginning to get some alcohol which is desirable for gentlemen's shoe-blacking, water proofing, chemical analysis, washing the bodies of the well to prevent sickness, and the sick that they may be made well when such there be. Those physicians who remained have very little practice and will soon have less (we hope).

With this general sentiment, it was difficult for a licensed medical doctor to earn a living in the early history of the valley. Another Thompsonian physician who practiced in Southern Utah was Priddy Meeks. A complete journal of his life is given in Volume X of the Utah Historical Quarterly. The following is quoted from that journal:

> In Leeds, Washington County, Utah, I was called to see a woman in childbed that could not be delivered with all the best wisdom and talents that were to be had among the women of that county. Well, she was in a deplorable condition. She had been five days in that state without any progress whatever, all hands disheartened and the case given up. There she lay in a cold, lifeless condition, her strength exhausted and her pains gone and little if any progress made. I commenced a little before sunset and by eight o'clock in the morning she was comfortable in bed with a 12 pound boy by her side. But it was dead before I commenced.
>
> Treatment: I relaxed her system to the flexibility of a wet cloth with lobelia, which can be done if persevered in sufficiently, without any danger whatever. It is perfectly harmless. At the same time give freely of cayenne pepper with the lobelia in warm teas of some kind, and this medicine will diffuse itself through the whole system from the top of the head to the end of the toes, removing obstructions wherever found and restoring a healthy action whenever needed, increasing vitality and the power of life-giving strength and energy to the internal forces; and in that condition you cannot prevent her delivery according to the Law of Nature which is the Law of God, and by letting her alone in this condition the pains will return just as natural as the water will follow the ditch.

He follows with a detailed description of two other deliveries in which he participated, all resulted in perinatal death. By Doctor Meeks' account, lobelia is the most powerful diffusive stimulant known to medicine:

> After taking a dose, it instantly permeates the whole system, removing obstructions whenever found, and restoring a healthy action whenever needed; it is one of the most powerful relaxants known in the science of medicine, and yet perfectly harmless in all of its operations upon the human system; a surer, quicker and more powerful antipoison is not known and probably never will be. The same dose that would deliver a dead fetus speedily, will prevent an abortion if the child were alive. You need not inquire of the patient where or what the nature of the complaint. Give the lobelia and it will find the disease and assist nature to overcome it. It will not act upon a dying person.

I have gone into detail to demonstrate the medical prowess of early practice of medicine in this area. Fortunately, most of the pioneer women were delivered by skilled and unskilled midwives. Practically all of the babies that were born during the time the people moved from Nauvoo, Illinois, to Winter Quarters and from Winter Quarters to Salt Lake City were delivered by midwives without any formal training. One of them was Mrs. Patty Sessions. Reading from her diary of the hardships that she encountered in delivery while crossing the central plains induces real humility, especially in comparison with the many conveniences available today to assist the obstetrician. Mrs. Sessions was born in 1795 and at the age of 17 married. Shortly thereafter she commenced the practice of midwifery. Twenty-two years later she joined the Mormon Church and made the exodus from Nauvoo and then the trek across the plains with one of the early wagon trains. She drove a four-ox team part of the way and walked the rest, delivering all of the babies born on the trip. Arriving in Salt Lake Valley September 24, 1847, she delivered the first male child born in the valley two days later. From September 26, 1847, to December 14, 1847, she delivered fourteen babies and by August of 1848 had delivered 248 babies in the valley. On Setember 16, 1848 she delivered a woman of twins, both "growing together." On January 11, 1849 she wrote:

> I was called to Willard Snow's. Susan was sick. I staid all day and all night. She was a cripple and was disformed so that her child could not be born without instruments. The doctor came Friday morning and delivered her with instruments. The child was alive but the mother died in a few minutes—the only case of the kind I ever witnessed. Although I have practiced midwifery for 37 years and put thousands to bed, I never saw a woman die in that situation before.

There are only two other complicated cases recorded in her diary. One of these involved a transverse lie with a prolapsed arm resulting in a rupture of the uterus and death of both mother and child. The second was an instance of impacted fetal shoulders in which she failed to deliver the baby and both died. She delivered a total of 3,977 babies and died December 14, 1893, at the age of 99.

Another famous Utah midwife was Aunt Jody Wood. She was doctor to Bluff, Utah, for 25 years. She often gave her services free, sometimes accepting fruit, honey, meat, cloth or anything usable as payment. Her regular charge was $2.50 for confinement, which included care for both mother and baby. She did the washing and cooking for ten days and served longer when necessary.

Zina Young, wife of Brigham Young, was a well-trained midwife. She brought almost all of his children into the world as she did hundreds of other babies. Other midwives were Margery Lisk Spence, Janet Downie Hardie, Almena Randall Farr and Eliza Wesley. All of these women received special training in obstetrics. The natural aversion of the average young woman to assistance in childbirth by a male physician was widespread and deep-seated among the early Mormons. Though it was only the manifestation of sincere modesty, it was shared most earnestly by the average pioneer husband. Thus, it is easy to understand why the system of midwifery prevailed almost exclusively in Utah obstetrics for a great many years.

Mr. Frank E. Lees of the Utah State Board of Registration gave me an estimate of the number of midwives who had practiced in Utah. Midwives were formerly referred to as obstetricians by the Board of Registration. The first, Mrs. Grace, registered on February 11, 1893. From 1893 to 1906 there were 467 registered midwives. From 1906 to July, 1927, there were 180 registered, and from 1927 to 1932 there were 207. The last year in which midwives were required to register was 1932; however, there are now six registered practicing midwives in Utah.

Women doctors encouraged to practice

In the great colonization of Utah, out of the urgency for proper care during childbirth, a large group of women doctors emerged. It was not until 25 years after the entrance of the Mormons into the valleys that Brigham Young asked the first of them, Romania Bunnell Pratt, to attend Women's Medical College in Philadelphia. Brigham Young gave many sermons in the tabernacle and a good many of them were later designed to entice women into the practice of medicine so that childbirth could be made easier and safer. As a result, the number of female doctors in Utah increased until there was a large per cent of them in relation to the population elsewhere. The first woman physician in Utah was Ellen B. Ferguson. She announced herself as a "specialist in diseases of women." However, Doctor Romania Bunnell Pratt was considered the first native Utahan to study medicine. She arrived in Utah June 15, 1855, in an independent company of fifty wagons, married Parley P. Pratt on February 23, 1859, and bore him several children. After listening to one of Brigham Young's sermons she decided to study medicine. She was graduated from the Women's Medical College in Philadelphia and commenced the practice in 1877. The same year she accepted a position as resident physician of the Deseret Hospital. She was one of the original members of the Board of Directors and gained a prominent reputation in obstetrics both as teacher and practitioner.

Martha Hughes Paul was born in 1857 and was graduated from the University of Michigan Medical School in 1880. She became the second resident physician of the Deseret Hospital and while there met and married Angus Munn Cannon, President of the Salt Lake Stake. This marriage became quite complex when she defeated her husband in an election for State Senator and became the first woman in the United States to be elected State Senator.

Utah's "grand ole Lady," Ellis R. Shipp, was born at a logging camp in Davis County Iowa in January 1847. In 1852 her grandfather, then captain of a Mormon company, brought her to Salt Lake City. After being graduated from Women's Medical College in Philadelphia at age 31, she commenced practice in Salt Lake City. According to the Utah Historical Quarterly and the *History of Medicine in Utah* by Blanche Rose, "Ellis R. Shipp will ever be remembered for the courses in nursing and obstetrics which she organized and conducted for so many years. Hundreds of women went out from her classes to take to all corners of Utah and some adjoining states, instructions in the basic principles of obstetrics and home nursing. Only a brave mathematician would attempt to compute the number of infant lives which were saved, and the mothers who were kept from the infections at that time so commonly associated with childbirth." Doctor Shipp died in 1939 at age 92.

These four women were by modern standards actually the first obstetricians to practice in Utah. They had a general practice, but their specialty was obstetrics. They served the state well, in that they not only delivered babies, but they set up classes to teach basic fundamentals.

Early male physicians

At this time mention should be made of the early male physicians in Utah, though they actually had little to do with the practice of obstetrics. John Milton Bernhisel joined the Latter-day Saints Church in 1842 and when the Territory of Utah was created, Doctor Bernhisel was elected August 4, 1851, as its first delegate to the Federal Congress. He was re-elected in 1853, 1855, and 1857. He not only proved a skillful doctor, but was regarded an authority on economics and politics.

William France was a graduate of the University of Glasgow and became an early Mormon convert. He practiced in Utah until his death in 1860.

Washington F. Anderson was a famous early physician who was non-Mormon, but was nevertheless welcomed to Utah by Brigham Young. He obtained his medical education in the University of Virginia in 1841 and at the University of Maryland from 1842 to 1844. During 1842 and 1843 he was resident at the Baltimore Alms House Hospital. In the early 1870's he was elected president of the

first Medical Society of Utah. He did much to improve the quality of the practice of general medicine in Utah before his death on April 21, 1903.

Seymour Bickwell Young, a nephew of Brigham Young, was also a famous early physician who did much to improve the practice of medicine in the state. He may be considered the first male native son to go into the field of medicine. In 1855, he went on a mission to England, pushing a hand cart from Utah to the Missouri River. He later was graduated from the University of Deseret and received his medical degree from the College of Physicians and Surgeons of New York City in 1872. He died in 1924 at the age of 87.

First hospital opened

The first hospital in Utah known to have treated bed patients was opened in 1852 by Doctor Ezra Williams. He assumed the title of doctor because his father was a Thompsonian licensee. This hospital remained open until 1853. The Transcontinental Railroad, completed in 1869, bringing Utah's geographic isolation to an end, changed the whole economic picture of the territory by making it possible for mines to operate at a profit. This increased economic activity and the influx of miners made it necessary to build hospitals. St. Mark's Hospital, the first reputable hospital in Utah, was dedicated on April 30, 1872, and was located on the corner of 4th South and 5th East, Salt Lake City. In 1876 it moved one block north and had a capacity of twelve beds. In 1893, it moved to its present location and had a capacity of thirty beds. In 1896, the south wing complete, increased the beds to 125. The admission books for the hospital from July 1872 until the end of 1903 show 16,839 cases admitted. The most frequent admitting diagnosis was lead poisoning. There were very few women delivered in the hospital and only a few gynecologic operations were performed. Doctor Wayne Babcock, former Professor of Surgery at Temple University, Philadelphia, interned at St. Mark's Hospital in 1893 and 1894 and confirms the above statement in a letter written to Doctor Ralph Richards in 1944. He stated, "Deliveries were rare. I recall one nephrectomy, one trephine for a penknife blade driven through the skull, partial removal of adherent ovarian cyst with drainage, and perhaps a few operations on the uterine appendages. I recall no appendectomy or operation upon the gallbladder and no open reduction of a fracture."

The Holy Cross Hospital came into being in 1875 at the request of Reverend Lawrence Scanlan, who later became the first Bishop of Salt Lake. It was located on 5th East between South Temple and 1st South Streets and then had a capacity of twelve beds. The present location was purchased in 1881. The earliest gynecologist for which there is record was Doctor H. N. Niles. He was admitted to the Holy Cross Hospital Staff in 1896 and from 1901 to 1905 he performed 391 gynecologic operations. Doctor Ralph Richards, in his book "Of Medicine, Hospitals and Doctors," states:

> All of Doctor Niles' operative manipulations were exceedingly gentle and exact. In the presence of abdominal adhesions he was at his best, and few surgeons surpassed him in the dissection of the female pelvis. Indeed, he so impressed me that even to this day in operating in the presence of adherent pelvic organs, I apply his methods. Many patients in my hands have been the beneficiaries of his teaching.

All of you who knew and worked with Doctor Richards know that it was difficult for him to compliment another surgeon and therefore, his statement makes one sure that Doctor Niles was highly skilled in gynecologic surgery. He died of a stroke in 1909 at the age of 54.

The first hospital in Ogden, Utah, was established by the city about 1875 in rooms in a hotel building at 25th Street and Grant Avenue. Doctor H. J. Power, city physician, was in charge. It later closed in 1882. About 1883, the Union Pacific Railroad purchased a building to function as a hospital on the south side of 28th Street, just west of Adams Street. It was supervised by Doctor George W. Perkins. About 1891, the Ogden Medical and Surgical Hospital was opened but it closed six years later. In 1897, Doctors Coultus, Conroy, Osgood, Dickson, Pugmire, E. I. Rich, Ezra C. Rich, Gordon, De Witt, Joyce and Hyde, leased this hospital from the city.

In the early days of the area, the medical needs of the members of the Latter-day Saints

faith were met by the Deseret Hospital in Salt Lake City. This hospital, sponsored by the Latter-day Saints Women's Relief Society, opened July 17, 1882, was located on 5th East between South Temple and 1st South Streets, and was primarily used as a maternity hospital. A school for the purpose of educating midwives and training nurses was established there. In 1884 the hospital moved to occupy quarters vacated by the University of Deseret, and increased its capacity from twelve to fifty beds. The cost for hospitalization at the Deseret Hospital was $6.00 per week. Apparently because few women wanted to be delivered in a hospital, it closed its doors in 1890.

In 1895, Doctor W. H. Groves, a dentist in Salt Lake City, was persuaded by Doctor Joseph Richards, father of Ralph T. Richards, to endow a hospital. Doctor Groves died in April, 1895, of a coronary and left $85,000.00 to a hospital to be named "The Doctor W. H. Groves Latter-day Saints Hospital." The hospital was dedicated January 3, 1905, with Doctor Joseph Richards its first medical director.

The Salt Lake General Hospital was founded in 1910 and was first known as the County Infirmary Hospital. It was opened to patients on May 12, 1912, under the direction of James Sabine, Jr., Doctor A. N. Hansen being the first County Physician. The Thomas D. Dee Memorial Hospital was opened in Ogden in 1910. The original plant was built at a cost of $110,000.00 donated by the Dee family, but within three years a $30,000.00 deficit accrued so its financial support was assumed by the Latter-day Saints Church, which has continued to operate it.

State medical school established

One of the most significant factors which effected the practice of medicine in Utah was the establishment in 1905 of a State Medical School. The first course of medicine provided the first two years of a four-year course. At that time, pre-medical education was not required, but a four-year combined course of arts and medicine was given. Students were admitted directly to medical school from high school. In 1909 the requirements were raised to include two years of college work and in 1924 they were again increased to three years of college work. In 1943 it became a four-year medical school. Doctor A. Louis Dippel was its first Professor of Obstetrics and Gynecology. In 1944 he was replaced by Doctor Charles E. McLennan. The latter moved to Stanford University in 1947 and the professorship was assumed by Doctor Emil G. Holmstrom, who had a great deal to do with the founding of this society in 1948. Doctor Holmstrom was replaced by the present Professor of Obstetrics and Gynecology, Doctor Irwin H. Kaiser, in 1959.

Many of the men we know now as surgeons and internists delivered babies as general practitioners in their early years of practice. Hospitals were erected in the late eighteen hundreds and early nineteen hundreds, but most women preferred confinement at home. In 1908, in the Latter-day Saints Hospital there were only 36 babies delivered. This was only 3% of the 1,136 patients admitted that year. They remained in the hospital from eleven to forty-nine days, so apparently only the complicated cases were admitted to the hospital. By 1922 there were 366 babies delivered in the same hospital. This was 8.7% of the 4,195 admissions and the patients stayed for an average of ten to nineteen days. Doctors John Sharp, L. A. Stevenson, T. F. H. Morton, Openshaw, Woolsey, Grosbeck, and Hunter were the men who delivered most of the babies that year. In 1937 there were 1,583 deliveries accounting for 19% of the 8,000 patients admitted. In 1947 there were 4,600 deliveries or 28% of the 14,190 patients admitted. In 1957 there were 6,197 births or 31.8% of the 19,000 patients admitted. In 1960 in the State of Utah, there were 26,644 births; of this number only 340 were delivered in the home and 198 delivered by someone other than a physician. It was not until the nineteen thirties that people became convinced that hospital deliver was safer than home delivery.

Obstetric specialists

Obstetrics as practiced by the obstetrical specialist is a recent phenomenon in Utah. The earliest obstetrical specialist who confined his work solely to obstetrics and gynecology was one of the original founders of the

Intermountain Clinic in 1919, Doctor William Hunter, prominent in the archives of the Latter-day Saints Hospital. He later moved to Los Angeles. The Salt Lake Clinic was founded in 1915, but did not have an obstetrician originally associated with them. Most of the original founders delivered babies until William Nebeker took over as first Clinic obstetrician. He later left the clinic and Doctor Mervyn S. Sanders assumed his post.

The American Board of Obstetrics and Gynecology was founded in 1930 and the first examination was given in 1931. The following is an excerpt from a letter received from Robert L. Faulkner, Executive Secretary and Treasurer of the American Board:

> In reply to your inquiry of April 27th, I believe the first examination given by this Board was in 1931, although up until 1941, those doctors who had limited their practice to obstetrics and/or gynecology for a period of ten years or more, with adequate special training, were required to take the oral, clinical and laboratory examination; whereas the younger practitioners with five or more years in the specialty, had to take both the written and oral examinations. After the year 1941, all applicants were obliged to take both the written and oral examinations.

Our records indicate that Doctor Vernon L. Ward of Ogden, Utah, was the first doctor certified in that state. There are now a total of 33 Board certified men in the State of Utah. William Nebeker, Ray T. Woolsey, and J. Russell Wheritt later passed the examination to join Doctor Ward as the early certified specialists in this state. According to the 1961 Rocky Mountain Medical Directory there are 60 physicians in the State of Utah confining their work to obstetrics and gynecology.

Maternal and perinatal statistics

The following figures are useful in demonstrating the decline in Utah maternal and perinatal mortality rates which parallels this story. In the State of Utah in 1927 the population was 499,905; there were 12,871 live births and 97 maternal deaths; 699 infant deaths and 304 stillbirths. In 1960, our population was 895,000; there were 26,644 live births and 5 maternal deaths; 516 infant deaths and 276 stillbirths. This is a decrease in maternal deaths from 7.5% in 1927 to 0.2% in 1960, and a drop in infant deaths in 1927 from 54.3 to 19.4 per thousand live births in 1960. On October 15, 1962, there was an article on the front page of the American Medical Association News stating that Utah had the lowest fetal death rate of any state in the Union:

> The U. S. infant death rate has decreased by nearly 75 per cent since World War I to a record low in 1961, according to the Health Information Foundation. A report on the "diminishing hazards of infancy" from 1915 to the present said that currently about one in 40 American babies dies before the first birthday, wherein in 1915 the rate was one in 10.
>
> The 1961 mortality—25.3 deaths for 1,000 live births—was slightly lower than the 1960 rate of 25.7 and continued the general downward trend attributable to significant advances against infective and parasitic diseases and respiratory and digestive disorder, the Foundation said.
>
> At present, lowest infant death rates are occurring in the West North Central and New England states. The highest in the South Atlantic and East South Central states. Utah, the state with the best record, had only 20 deaths per 1,000 live births in 1961, the lowest ever recorded for any state.
>
> " 'If the level of survival attained in Utah had been achieved throughout the country last year,' Foundation Director George Bugbee observed, 'some 27,000 more infants would have lived.' "

We should all be very proud of this record and strive to do everything in our power to make the rate even lower than it is now. The modern hospitals, blood banks, antibiotics and modern transportation make the practice of obstetrics today much more desirable than i was at the turn of the century. We have many advantages as modern day obstetricians and we should be grateful and humble in the heritage we have received from our sturdy forebearers. I have spent a good deal of time browsing through the various archives of the State in an attempt to give you a fairly accurate account of the obstetrics as practiced in the past, and it is my hope that you appreciated and enjoyed this material as much as I.

Solid malignant teratoma of the ovary in a 79-year-old woman

John H. Clifford, MD, and Henry W. Toll, Jr., MD, Denver*

It is the purpose of this article to report and document the occurrence of this tumor in a woman approaching the end of her eighth decade.

MALIGNANT TERATOMAS OF THE OVARY are rarely found neoplasms, usually occurring in the second decade[5] and constituting 0.015 per cent of the ovarian neoplasms.[1] The oldest patient in whom this tumor has been reported was 68 years,[4] however, this report was not well documented by photographs.

Case Report

E. P. D., a 79-year-old white female, lost 18 pounds in six months and began to have intermittent abdominal pain, nausea, and vomiting about two months prior to seeing her physician. Pelvic examination revealed a 6 cm. left pelvic mass. An exploratory laparotomy was performed and a bilateral salpingo-oophorectomy and a biopsy of the anterior abdominal wall were done.

The right ovarian tissue was yellowish-gray, fragmented, the largest individual fragment measuring 8 cm. in greatest dimension. The left ovary was 2.7 cm. in diameter. Histologically there was total replacement of the right ovary, partial replacement of the left ovary and metastases to the anterior abdominal wall by a malignant neoplasm composed of bizarre anaplastic glands (Fig. 1). Psammoma bodies were present. In other areas, solid sheets of tumor cells suggesting rudimentary embryonal structures were seen (Fig. 2).

Two weeks following surgery she was referred to Presbyterian Hospital, Denver, for radiation therapy. She received tumor dosage of 3,000 R external radiation to the abdomen over a period of three months. She expired about three and one-half months following surgery.

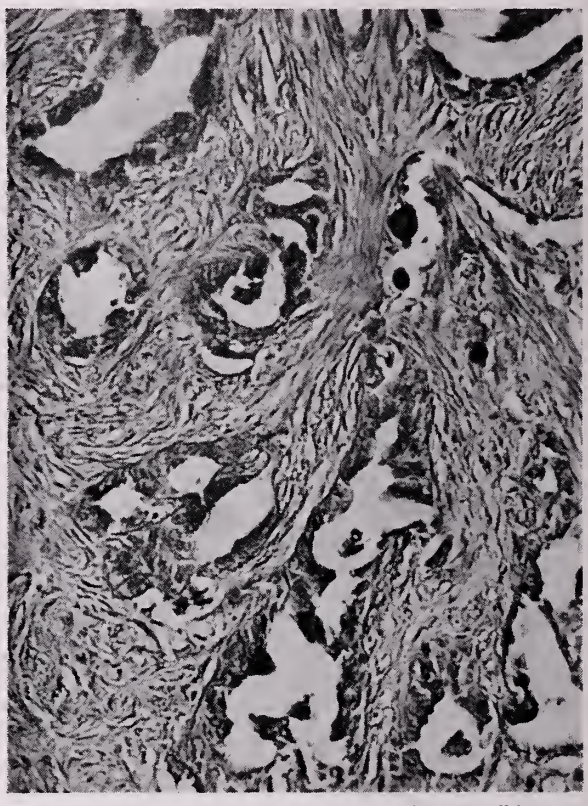


Fig 1. Right ovary (surgical specimen). Bizarre, anaplastic glands and psammoma bodies. (Hematoxylin and eosin, x 80).

Autopsy disclosed bilateral bronchopneumonia and tumor metastases to the liver, abdominal wall and the intestines. Histologic examination of the tumor metastases disclosed the same pattern noted in the surgical specimen and in addition cartilage (Fig. 3) and squamous epithelium forming keratin (Fig. 4). Malignant connective tissue stroma, resembling smooth muscle, was present in some areas. No neural tissue was identified.

*From the Department of Pathology, Presbyterian Medical Center, Denver. The microscopic slides of the surgical specimen were graciously loaned to us by Physicians Laboratory, Omaha, Nebraska.

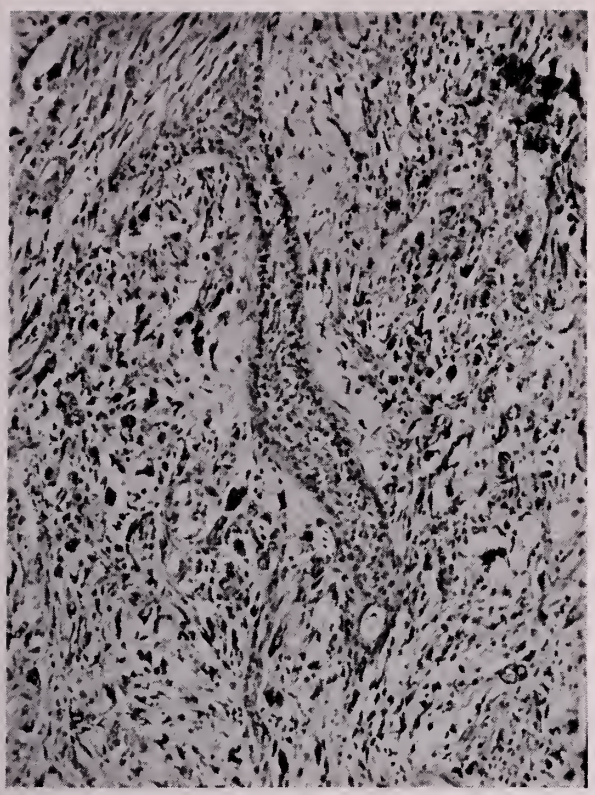


Fig. 2. Right ovary (surgical specimen). Solid sheet of tumor suggesting a rudimentary embryonal structure. (Hematoxylin and eosin, x 80).

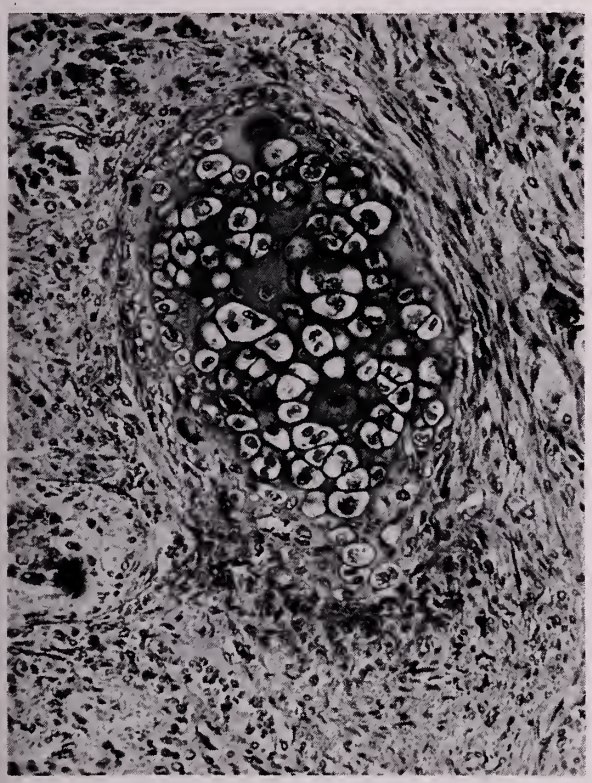


Fig. 3. Metastasis (autopsy specimen). Formation of cartilage. (Hematoxylin and eosin, x 240).

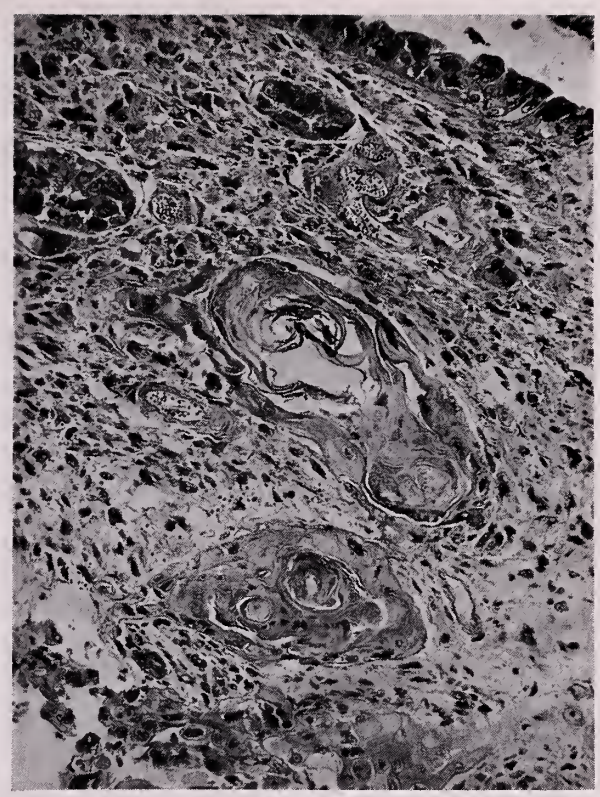


Fig. 4. Metastasis (autopsy specimen). Formation of keratin by squamous epithelium. (Hematoxylin and eosin, x 240).

Discussion

The occurrence of a malignant teratoma in an individual of this advanced age (79 years) has not hitherto been reported. The patient underwent the usual treatment, surgery and radiation, and experienced the usual short-term survival,[2] living only three and one-half months following surgery. Malignant cells representing ectoderm, endoderm, and mesoderm were present. •

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Organic brain syndrome*

Early detection in the child

Jean L. McMahon, MD, Denver*

As medicine advances with use of antibiotics, exchange transfusions, improved premature care, and new obstetrical technics, the childhood mortality rate is reduced but in many instances the morbidity is increased by addition of mentally and physically handicapped children. Among this group is a substantial number of minimally damaged children—children who do not show gross abnormalities or prominent deviations from normal growth patterns, but who will have learning or behavior problems as they approach school age. These are children who, with early detection and some specific help in the preschool years, can compensate well, and at a later date can fit into a regular school program. It is of utmost importance to recognize these children before they have floundered in school for several years and have developed the associated emotional overlay or have been classified as retarded.

The problem is one of central neurological dysfunction affecting the concept of language or symbols in either or both visual and auditory areas. Etiology is varied—genetic, anoxic, traumatic. This is a broad field, and one that concerns professional people of many disciplines. I shall discuss the problem only as it relates to early detection by the pediatrician or family physician, in order that he may better select the child who needs further testing.

Clues to this syndrome are subtle. There must be a number of them, they must be used in relation to other factors, and they have to be collected over a period of one or two years. This is not an abnormality that is easily picked up in a busy office with appointments every fifteen minutes and most of the children presenting because of acute illness. Nor is it seen by the doctor who feels that all mothers are over-anxious and that these are variations that children outgrow. With awareness of the problem, interest, encouragement of parents to bring their children in for routine checks, and a minimal addition of time, this condition can be suspected early and the child referred for definitive testing before three or four years of age—thus affording a leeway of two or three years for therapy, if indicated.

In case histories taken on some 2,000 children seen in the speech and audiology departments, and 1,300 seen in the Developmental and Evaluation Clinic, there are many statements that keep recurring in regard to this particular group of children.

1. The presenting complaint is usually referable to the language area. It ranges anywhere from no speech to difficulty in learning to read and write.
2. The child is described as being hyperactive, having a short attention span, and being more difficult to manage than the other children.
3. There is occasionally some question as to how well the child hears.
4. It is frequently stated that the child is awkward or clumsy. His physical development has been normal or only two to three months behind the average.
5. Their first year of life seems to have been characterized by one of two extremes. The child was so good that they didn't know they had a baby in the house; he slept most of the time, never bothered by noises, and didn't vocalize

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much. At the other end of the spectrum he is described as having had "colic", fussed day and night, had innumerable changes of formula, took forever to feed, choked easily, and was slow in adapting to solid foods.

On physical examination there is nothing outstanding. The child may be awkward as he runs, and his fine motor activity is not too well controlled. There may be mixed dominance or a delay in establishing handedness. Occasionally there may be some mild paresis of the face or of an extremity. The electroencephalogram is more often than not read as showing an abnormal pattern or as being poorly organized. The ratio of boys to girls is approximately five to one.

There are a variety of developmental or communication charts that can be used by a physician in his office. Most of them require little equipment or time yet provide a systematic followup of development of an infant's growth in hearing, speech and language as compared to his overall physical development.

If there is any doubt about the normal development of reception and expression of language, the child should be followed closely by his physician. Some children are "slow starters." Communication patterns, however, should begin to "jell" between the one and two year level or problems may be evidenced later in the language symbolic areas of reading, writing and spelling. The two year level is an important one. If there is an obvious lack of communication at this time, the physician should question whether or not there is a possibility of a slowly acquired hearing loss, infantile aphasia, a central nervous system disorder, mild mental retardation or an emotional factor. The more obvious difficulties involving deafness, cleft palate, cerebral palsy, Mongolism or mental deficiency would have been diagnosed before this. The physician should discuss the matter with the parents, not for the purpose of alarming them, but to give them suggestions as to how to stimulate an interest in speech in the child. If at three years there is still a definite lag in communication, the child should be referred to a speech clinic for full testing by the audiologist, the speech pathologist, and the psychologist.

There are technics that help these children develop language concepts and compensate for their deficits before they have to learn to read, write, and spell. The Children's Hospital has had a special program for the past seven years for children with language disorders. Four-hundred and fifty children have participated in this program, all of whom are followed for at least five years after their dismissal from it. The results have been most gratifying.

Summary

By adding knowledge of normal communication patterns to knowledge of normal growth and development, the physician can save many children from unfortunate school experiences, and can reduce the number of frustrated parents who have been blamed through the years for poor behavior and substandard school achievement of their children. •

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Apothegm

"To their second and sober thoughts . . ."
—Matthew Henry

Clinical data

A 61-year-old woman was admitted for vomiting and intense cramping pain of 24 hours duration. One week earlier she had been discharged from the hospital with a diagnosis of penetrating ulcer of the stomach (Fig. 1, arrow), for which treatment had been started. She had been having abdominal pain for about seven months, the pain lasting for about one hour and then relenting, and sometimes accompanied by nausea and vomiting. These episodes occurred two to three times a week. Past history revealed a hysterectomy, appendectomy and recent cystitis.

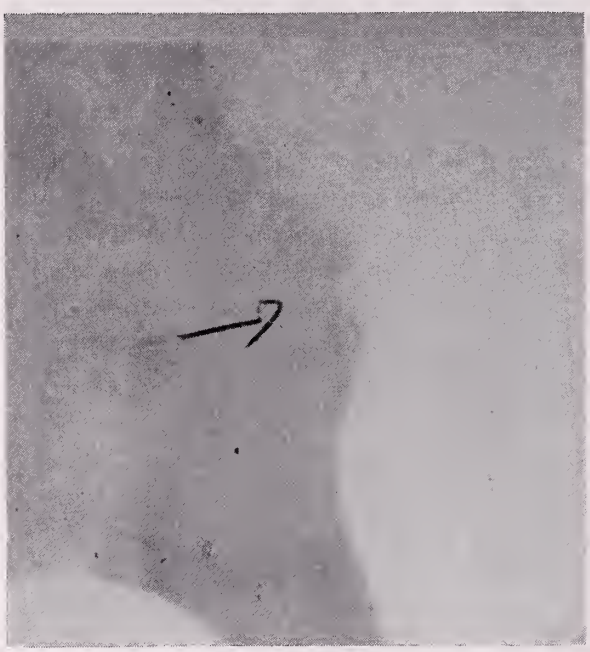

Fig. 1. Upper gastrointestinal examination shows lesion of posterior wall of stomach.

Moderate abdominal distention, moderate anemia and mild electrolyte imbalance were present. There was no free acid in the stomach, but considerable secretions were found after a test meal.

Radiologic study

Another gastrointestinal examination failed to show a gastric abnormality. Instead, an ulcerative lesion of the jejunum was demonstrated (Fig. 2, arrow), with partial obstruction present.

Fig. 2. Ulcerating lesion of jejunum demonstrated by upper gastrointestinal examination.

Clinical course

An infiltrating carcinoma of the jejunum was resected which extended into the mesocolon; there were metastases to mesenteric lymph glands. The patient's postoperative condition was uneventful.

Epicrisis

This case has some of the features of the Dudley-Klingenstein syndrome. Occasionally, patients with a neoplasm of the jejunum have symptoms resembling ulcer disease, but usual treatment fails to relieve symptoms. There is persistent melena without hematemesis. It is important to rule out jejunal disease in such clinical situations by repeated roentgenologic studies.

A radiologic note is in order. The barium projection in Fig. 1 looks like a real ulcer, but was questioned, since it could not be shown a week later, at which time the patient's condition had grown worse. Several speculative answers are possible. Perhaps the most attractive is to consider the possibility of contracting circular muscle in this portion of the stomach (junction of fundus and body) producing a shadow that looks like an ulcer, disturbing the clinician's diagnosis and destroying the radiologist's equanimity.

Note: I am indebted to Drs. Richard B. Streeper and Edward O. Goodrich for permission to present this material.

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NOTICE

An invitation has been issued to physicians who specialize in physical medicine and rehabilitation (PM&R) to spend one or two years as research associates in a Veterans Administration hospital of their choice. This learn-by-doing research training is available at four major PM&R research laboratories or at any of VA's 165 hospitals with a teaching-research PM&R program.

The VA will pay a research associate participating in this program $12,873 annually while he is engaged in independent research as a member of a team of staff physicians and professors from the nation's finest schools of medicine.

Trainees in this program will devote three-quarters of their time to research and training in their field, and the rest to teaching and clinical medicine. They may accept faculty appointments under the same conditions as other full-time members of the hospital staff.

Interested physicians should contact the Chief, Research in Physical Medicine and Education, Department of Medicine and Surgery, Veterans Administration, Central Office, Washington, D. C. 20420.

AS YOU LIKE IT...

A medical potpourri

Compiled by Andrew M. Babey, MD, Las Cruces, New Mexico

1. "It is a sad but relevant commentary on human affairs that there have been three outstanding intellectual achievements in science in this century. They are the understanding of nuclear processes within the atom, the elucidation of how the nerve cells in the brain function to transmit information, and the breaking of the nucleic acid code in molecular biology.

"From the first two we have developed the hydrogen bomb and the nerve gases. One could enumerate many minor beneficial effects, but from the human angle they are trivial compared with the threat of death and destruction that the two weapons hold over our heads. Viruses are genetically controlled and are the only organisms that in the foreseeable future are likely to be subject to manipulation by chemical means." Sir Macfarlane Burnet: MEDICAL WORLD NEWS. December 2:58, 1966.

2. "(This) age when available hours of leisure have become inversely proportional to the level of education." Pertinax: BRITISH MEDICAL JOURNAL. February 29:553, 1964.

3. "Pain radiating to the arms or jaw, although commonly believed to indicate cardiac pain, was found not infrequently in oesophagitis. Precipitation by exercise (particularly when this entailed straining or bending) or by emotion was encountered in about a quarter of the patients with undoubted oesophageal pain. In our patients, oesophageal pain was brought on by food much more commonly than was cardiac pain, and this together with its burning character, relation to posture, and relief by antacid was the most valuable pointer towards its diagnosis. The most diagnostically useful associated features were dyspnea with cardiac pain and acid reflux into the mouth in oesophageal pain." John R. Bennett, M.D., Michael Atkinson, M. D.: The Differentiation Between Oesophageal and Cardiac Pain, THE LANCET. November 1966, Vol. 11, 1126.

4. "Russell Howard used to say to his classes at the London Hospital that patients seemed to have no backs—only fronts. They were examined lying on their backs and were prodded carefully to elicit tenderness, but seldom underwent the same procedure lying on their bellies. Examination of the neck, shoulders, or back muscles was omitted or perfunctory." Annotations, THE LANCET, November, 1966, Vol. II, p. 1120.

5. "Before ordering an angiogram, remember its limitations: it may fail to show an occluded vessel known to be present; may show a complete occlusion that later is found to be incomplete; or may show a partial occlusion that is not an occlusion at all. Despite these limitations, angiography remains the best aid for diagnosing an occlusion of a cerebral vessel and for locating it in the neck or cranium. Also, it's the most accurate examination for subdural hematoma." Alpers, B. J., M.D.: CONSULTANT, Published by Smith, Kline & French. November-December, 1966, p. 38.

6. "For diagnosing most cases of myopathy, peripheral neuritis, or anterior horn disease, an electromyogram (EMG) is not necessary; these diseases are apparent from their clinical symptoms. In fact, the findings from an EMG may even be misleading, for they could be completely inconsistent with the clinical ones." Ibid: p. 39.

7. "Professional bodies are forced to behave and bargain like trade unions, mass society having degraded the profession to its own level. At the same time society tries to get the best of both worlds by appealing to the professional conscience and bleating about the profession's 'duty to society.' But Angus Maude claims that a doctor has no responsibility to society at all, his responsibility being directly to his patients as people and to his profession for its honor.

"By squeezing the professional man's profit, society may end by taking from him the kind of

countenance that matters most—his self-respect." Lister, J., M.D., "By The London Post; Medicine—Profession or Trade?" *The New England Journal of Medicine,* November 24:1189, 1966.

8. "Once when he was asked what difference he noted between life in Europe and life in the United States, he (Dr. Franz G. Alexander) said that in Europe his professional life had been an appendage of his personal life but in America the opposite was true." Alexander, F. G., M.D. (Obituary), *The Lancet,* March 28:729, 1964.

9. "First, as to conferences and congresses. These are almost wholly a waste of time and money; in Europe many of them are mounted merely to lure foreign visitors and their currency. The proceedings have reduced themselves to absurdity. Someone gets up for five minutes, gabbles his message (which in any case is already in print), and projects the slides, without which no "communication" can be held to be respectable. Often his audience is limited to others waiting impatiently for their five minutes at the rostrum." "The Wandervogel Syndrome," *The Lancet,* II:1411, 1966.

10. "It needs to be said that the preoccupation with what is called 'the wonderful progress in medicine' ought not to take precedence over the practice of what is known and well established. For most illnesses, the standard requirements remain standard—early diagnosis, correct treatment, good nursing, and sympathetic handling of the patient and family. These requirements don't call for frequent trips to New York, London, Detroit, or Rome. True, early diagnosis and correct treatment may reach different levels of achievement in these places; far too often, however, the Wandervogel comes away impressed with some new, gleaming, expensive piece of equipment and moans about the parsimony of the financial controllers in his own institution who are depriving him of the new toy. Come hell or high water, he wants his hyperbaric chamber and his computer." Ibid., 1412.

11. "In the seventh decade the incidence of cancer of the prostate presumably asymptomatic since it is discovered only by histologic examination at autopsy, is approximately 19 per cent. The mortality from cancer of the prostate in this age group is about 0.055 per cent: in other words, 99.7 per cent of men who have cancer of the prostate die from other causes without manifestations of the disease or treatment for it. How long these asymptomatic cancers have been present is obviously unknown." Correspondence (The Editor), *The New England Journal of Medicine,* 276:121, 1967.

NOTICE

An inquiry has been received from Dr. J. J. Groen, head of Internal Medicine Department of the Hadassah-Hebrew University Hospital in Jerusalem, Israel, for a biochemist who would be interested in working with him in doing research in connection with Gaucher's Disease for one year. Funds are available.

If interested, contact Dr. Groen directly, or call Louis E. Gelt, 244-7476 in Denver.

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Dovis Nursing Home 1440 Vine Street Denver	120
Denver Nursing Home 1401 Josephine Denver	76
Presbyterian Medical Center 1801 E. 19th Avenue Denver	24
Lake Manor Nursing Home 1655 Eaton Street Edgewater	65
Fairacres Manor, Inc. 1700 18th Avenue Greeley	100
Charm Acres Nursing Residence 1650 Allison Street Lakewood	86
Sacred Heart Hospital 1001 South Main Street Lamar	20
Foothills Nursing Home 1440 Coffman Street Longmont	24
Eden Valley Sanatarium and Rehabilitation Center Estes Park Route Loveland	40

COLORADO CERTIFIED HOME HEALTH AGENCIES

Name and Address	Services
Boulder County VNA, Inc. 3450 Broadway Boulder, Colorado 80302	Physical Therapy Home Health Aide Nursing
The Visiting Nurse Association of Denver Area, Inc. 659 Cherokee Street Denver, Colorado 80204	Physical Therapy Speech Therapy Occupational Therapy Medical Social Worker Home Health Aide Nursing
Northwest Colorado VNA P. O. Box 417 Steamboat Springs, Colorado	Physical Therapy Nursing
Nursing Division, Pueblo City-County Health Department 151 Central Main Pueblo, Colorado 81003	Physical Therapy Nursing
Northeast VNA, Northeast District Health Department 700 Columbine Sterling, Colorado 80751	Physical Therapy Speech Therapy Nursing
Nursing Services Division **Tri-County District Health Department** 1451 Kenton Street Aurora, Colorado 80010	Medical Social Worker Home Health Aide Nursing
Jefferson County VNA **Jefferson County Health Department** 260 South Kipling Lakewood, Colorado 80226	Physical Therapy Speech Therapy Nursing
El Paso VNA, c/o El Paso City-County Health Department 501 North Foote Avenue Colorado Springs, Colorado	Physical Therapy Speech Therapy Occupational Therapy Nursing
Las Animas-Huerfono County Nursing Service 723 Arizona Street Trinidad, Colorado 81082	Occupational Therapy Nursing
San Juan Basin Health Department 1905 East 3rd Avenue Durango, Colorado 81301	Medical Social Service Nursing
Weld County Health Department 16th Street at 17th Avenue Greeley, Colorado 80631	Physical Therapy Speech Therapy Occupational Therapy Mental Health Nursing
Dominican Sisters of the Sick Poor 2501 Gaylord Street Denver, Colorado 80205	Physical Therapy Speech Therapy Occupational Therapy Medical Social Services Home Health Aide Nursing
Fremont County Nursing Service Courthouse, P. O. Box 349 Canon City, Colorado 81212	Speech Therapy Nursing
Eagle County Nursing Service Eagle, Colorado	Home Health Aide Nursing
Bent County Nursing Service 205 2nd Street, P. O. Box 7 Las Animas, Colorado 81054	Occupational Therapy Nursing
Prowers County Public Health Nursing Service Prowers County Courthouse P. O. Box 9 Lamar, Colorado	Occupational Therapy Nursing

Abstract of Minutes, House of Delegates of The New Mexico Medical Society

Ninth Interim Meeting
November 11-12, 1966
Alamogordo, New Mexico

The House of Delegates held two sessions at its Ninth Interim Meeting in Alamogordo, New Mexico, November 11-12, 1966. The Speaker, Hugh B. Woodward, and Vice Speaker, Ronald Dorn, alternated in presiding before the House. At the first meeting all reports published in the Handbook and all supplemental reports and resolutions which had been mimeographed after publication of the Handbook, as well as verbal and typed resolutions introduced on the floor of the House, were referred to appropriate reference committees.

FIRST SESSION

Friday, November 11, 1966

The House was called to order at 2:00 p.m. C. Pardue Bunch pronounced the invocation. Fifty-four delegates answered the roll call, including certified substitute alternates.

Tom L. Carr, M.D., President, spoke to the House outlining some of the issues presented to the House in the form of committee reports. He urged all delegates to participate in the discussions before the various reference committees. He mentioned the "inevitable change" in the practice of medicine in New Mexico and urged the physicians to attempt to anticipate and guide the health of New Mexico.

The Speaker introduced Mr. Dallas Whaley, Field Representative, American Medical Association, and Mr. Dave Morrison, Representative, AMPAC.

Speaker Woodward appointed the following to membership on reference committees:

A. Administrative Matters
Robert E. Cutler, Chairman
Morton W. Dann
Vaun T. Floyd
Richard A. Gooding
Melvin A. Lester

B. Legislation and Public Affairs
Emmet J. Thorpe, Chairman
J. Hunt Burress
Rex G. Quigley
Fred Harvey
Robert S. Stone

C. Miscellaneous Business
John F. Griffin, Chairman
Walter J. Hopkins
Jasper C. Hallford
M. Paul Mains
William J. Langlois

The Speaker introduced Harold J. Fenner, Chairman, Accident Prevention Committee. Dr. Fenner stated that the AMA Committee on Medical Aspects of Automotive Safety was meeting at this time in the motel and gave a brief summary of the functions of the AMA Committee before introducing the Chairman of the AMA Committee, A. J. Mirkin.

Dr. Mirkin expressed the good wishes of the AMA for a successful meeting of our House. He indicated that before he became a member of this committee he thought the AMA was a "Great White Father" somewhere that you could not get close to. He urged the members who are interested in automobile safety to make recommendations and suggestions to the AMA Department of Environmental Health, or specifically to this committee.

All supplemental reports and resolutions distributed at the table before the House were referred to reference committees by Speaker Woodward.

SECOND SESSION

Saturday, November 12, 1966

The House was called to order at 2:30 p.m., with fifty-five delegates answering roll call, including accredited substitute alternates.

Speaker Woodward appointed the following tellers for the elections: William J. Hossley, James R. Gay, L. N. McCullough, J. C. Dotson and Vaun T. Floyd.

Vice Speaker Dorn recognized Robert E. Cutler, Chairman, Reference Committee on Administrative Matters, for the purpose of rendering his report.

Report of Reference Committee on Administrative Matters

The following published reports considered by the Reference Committee were for information only, included no recommendations, and required no policy action, and were therefore ordered filed.

Delegate to the American Medical Association
Woman's Auxiliary to the New Mexico Medical Society
Interim Council Report with the exception of Item 1
Mental Health and Alcoholism—following certain corrections
Nominating Committee after deleting two names
Rocky Mountain Medical Journal
Advisory Committee to Selective Service
Grievance Committee
General Convention Committee

The Supplemental Report of the Council, with the exception of Item 3, was approved and included:

a) That the President use his discretion with regard to sending a committee chairman to an AMA meeting at State Society expense.
b) That the Chairman of the Maternal and Perinatal Mortality Committee be allocated $250.00 for travel expenses for the remainder of the year to visit various hospitals in the state and medical societies.
c) The Secretary-Treasurer was authorized to prepare a summary report regarding New Mexico Physicians' Service and actions of the Council for the Delegates.

(Condensed and abstracted from the stenographic minutes kept by Mrs. Edwina Miner. Reports referred to but not reproduced herein were distributed to all members of the House in mimeographed form. Copies of all reports are on file in the Executive Office of the Society and in the office of the Secretary of each component society, available for study by any member and, together with this abstract, present in full all proposals as well as actions taken upon them.)

d) Applications for Emeritus Membership status for Catharine Johnson and Wallace C. Beil were favorably received for transmission to the House.
e) Dues for John Murphy were excused for the year 1966.
f) Recommended the name of James W. Veenstra, Estancia, for Membership-at-Large to the House.
g) That the State Society request the AMA to perform a Community Medical Survey for Bernalillo County and that the State Society share in the expenses up to $250.00.
h) That the President appoint an Ad Hoc Committee with state-wide representation to study combining the Public Relations job of the State Society with the job of the executive secretary of the Bernalillo County Medical Association following the Community Medical Survey.
i) Approved a resolution regarding physician membership on hospital boards for submission to the House.
j) Approved a resolution regarding utilization review committees for government hospitals for the delegates' consideration.

Speaker Woodward recognized Emmet J. Thorpe, Chairman, Reference Committee on Legislation and Public Affairs, for the purpose of presenting his report.

Reference Committee on Legislation and Public Affairs

The following published reports considered by the Reference Committee were for information only, included no recommendations and required no policy action; therefore, were filed:

Council Supplemental Report, Item 3
Advisory Committee to the Department of Public Welfare
Legislative and Public Policy Committee Report and
Appendix A, Medical Examiners Bill
Appendix B, Relating to Optometry
Appendix C, LSD—Nevada Law
Appendix D, Protection of Children
New Mexico Physicians' Service
New Mexico Physicians' Service Report on Blue Shield
Public Relations Committee
Public Health Committee
Utilization Committees
Adjudication Committee
Ad Hoc Committee for Basic Science Study
Fee Committee

The New Mexico Physicians' Service Board was advised by the House to retain the requirement of 50 per cent attendance of members as a quorum.

The following two resolutions were introduced into the House by the Advisory Committee to the New Mexico Department of Public Welfare and both were unanimously approved:

Usual and Customary Fees

"BE IT RESOLVED, that the New Mexico Medical Society strongly recommends to the Department of Public Welfare that usual and customary fees be implemented in Title XIX for the State of New Mexico in order that all patients under public assistance programs may have access to and receive the same high quality care, and

"BE IT FURTHER RESOLVED, that the members of the New Mexico Medical Society will continue to bill all agencies for whom they perform medical services their usual and customary fees."

Funds for Title XIX

"BE IT RESOLVED, that the New Mexico Medical Society recommend to the Department of Public Welfare and the Legislative Finance Committee that funds be allocated to implement Part B, Title XIX for Welfare recipients over 65."

The following requests from the Legislative and Public Policy Committee were approved:

1) Introduce and support a Medical Examiners Bill in the coming Legislature.
2) Introduce and support a bill granting immunity from liability to a physician for drawing a blood sample when so ordered by a policeman.
3) Oppose any legislation granting authority to optometrists to diagnose or treat eye diseases or injuries.
4) To accept clerical assistance from NEMPAC during the Legislature.
5) To introduce and support a bill similar to the Nevada law dealing with dangerous drugs.
6) Support the present voluntary PKU Law.
7) To employ Bill Federici, Esq. for legal assistance during the coming session of the Legislature at a fee of $2,500.00.
8) To introduce an amendment to the Child Abuse Law.
9) To establish an executive committee consisting of the Chairman of the Legislative Committee, President and President-Elect of the New Mexico Medical Society, to act in cases of emergency during the next session of the Legislature.

A resolution sponsored by the Otero County Medical Society relating to the principle of individual responsibility was approved by the House.

The Reference Committee reviewed the report of the Ad Hoc Committee to Study New Mexico Abortion Laws and recommended that certain specifics in the report be studied further by the Legislative and Public Policy Committee; and further, that the Legislative Committee seek revision of the New Mexico abortion laws following the general principles of the Ad Hoc Committee's recommendations.

The Ad Hoc Committee for Basic Science Study submitted a resolution to the House which was amended in several instances. The resolution which was finally passed is as follows:

"WHEREAS, the Basic Science Law was originally proposed to keep out practitioners who are not competent in the Basic Sciences, and

"WHEREAS, this has not proven to be the desired result, and

"WHEREAS, many physicians have by-passed the State of New Mexico because of the Basic Science Law resulting in the physician population of 65 per 100,000 as against a recommended 133 per 100,000; therefore,

"BE IT RESOLVED, that legislation be enacted to eliminate the requirement that M.D.'s have a Basic Science Certificate; and

"BE IT FURTHER RESOLVED, that licensed practitioners of the respective 'arts' be represented on the Basic Science Board in proportion to their registration in the state; and

"BE IT FURTHER RESOLVED, that the Legislative Committee seek an amendment to the Basic Science Law to require the Basic Science Board to make available the total numbers who passed or failed in each of the healing arts."

Bernalillo County Medical Association had introduced a resolution concerning the control of those who could perform hypnosis. The resolution was referred to the Legislative Committee for study and report to the Council.

The delegates approved a resolution from Bernalillo County regarding the control of air pollution and urged the support of legislation that would develop a state-wide air pollution control under the administration of the State Health Department.

The House adopted the following principles as being in the best interest of patients receiving drugs under Welfare and other state government programs:

"PHYSICIAN'S DISCRETION. The physician's discretion to prescribe medication for patients under Welfare and other government programs should be the same as for his other patients. There should be no interference with the physician's professional prerogative to prescribe precise drug products or brands deemed to be in the patient's best interests.

"SO-CALLED 'GENERIC EQUIVALENTS'. Drug products bearing the same generic name are not necessarily equivalent in quality, potency, purity or therapeutic activity. Proposals that call for compulsory generic prescribing or require the dispensing of so-called 'generic equivalent' drugs may jeopardize the health of patients.

"FORMULARIES. Formularies, when utilized, should reflect the intent to provide the specific drug products or brands which physicians have prescribed or ordered. They should contain a convenient procedure for furnishing, as needed, agents not included in the formulary.

"PROMPT AVAILABILITY OF MEDICATION. Customary drug distribution channels for supplying medication best assure the availability of the medication when and where needed for patients receiving assistance under Welfare and other state government programs and for other patients alike."

A resolution introduced by Chaves County concerning certification and recertification under P.L. 89-97, requesting that a similar resolution be introduced into the 1966 AMA Las Vegas meeting was approved.

Reference Committee on Miscellaneous Business

The following published reports considered by the Reference Committee were for information only and included no recommendations or policy action therefore, were filed:

Accident Prevention Committee
Constitution and Bylaws Committee
Insurance Committee
Liaison Committee to Allied Professions and Voluntary Health Agencies, Items I through V
Medical-Legal Committee
Rocky Mountain Medical Conference Continuing Committee
Committee on Medicare for O.D.M.C.
Committee on Medicine and Religion

A proposal from the Constitution and Bylaws Committee to amend Chapter VII, Section 2C, regarding the composition of the New Mexico Physician Service Board was referred back to the committee due to more recent developments by the Board.

The Reference Committee reviewed the most informative Report of the Liaison Committee to Allied Professions and Voluntary Health Agencies concerning the lack of rehabilitation services in New Mexico and the committee's suggestions. The Reference Committee recommended that the Liaison Committee's recommendations be adopted and that the Liaison Committee implement these recommendations rather than appoint a new committee. The Reference Committee report and recommendations were approved.

The Maternal and Perinatal Mortality Committee requested an allocation of funds for members of the committee to visit various county societies and hospitals with the hope of receiving better cooperation and establishing committees in hospitals to review deaths. The House voted that the committee should be provided a maximum of $250.00 for the remainder of this year and that these funds shall be used for travel expense only.

The House voted that the Medicare Committee for O.D.M.C. be dissolved and that the functions of this committee be divided in the following manner:

A. The negotiation of fee contracts shall be carried out by the New Mexico Medical Society Fee Committee.
B. The adjudication of claims shall be carried out by the Adjudication Committee.

The Council's resolution pertaining to physician membership on hospital boards of trustees was favorably received by the House.

The Chairman of the Reference Committee indicated that the committee's work was made considerably more difficult than it might otherwise have been by the failure of appearance of many committee chairmen and committee members with pertinent information on the subjects to be discussed. The Reference Committee strongly recommends that the President, in considering appointments to such committees, shall ask potential chairman not only if they are willing to assume the duties pursuant to their activities, but also if they are willing to attend the meetings of the New Mexico Medical Society.

Election Results

The Speaker announced that the following slate had been elected to forward to the Blue Shield Board for their consideration in filling vacancies occurring on that Board:

Robert P. Beaudette, Raton
John F. Boyd, Albuquerque
David G. Clark, Albuquerque
J. C. Dotson, Los Alamos
James R. Gay, Albuquerque
James A. Koch, Albuquerque
M. J. Rowdabaugh, Albuquerque
Theodore Sadock, Albuquerque
T. L. Stangebye, Roswell
Oscar Syme, Albuquerque

R. C. Beaudette, Immediate Past-President, reported that during the last state general election, NEMPAC supported 9 Democrats and 6 won; and it supported 18 Republicans, with 17 winning. Dr. Beaudette indicated that these results reflect the good support and work of the NEMPAC organization and congratulated the members for their interest.

The Speaker recognized Irving Klein, member, Public Relations Committee, who announced that the Guy Rader Award has been given to Mrs. Margie Taylor with the *Albuquerque Tribune* for her series of articles on the New Mexico State Hospital in Las Vegas, Albuquerque hospitals, careers for nursing and venereal disease control.

Speaker Woodward recognized William Hossley, of Deming. Dr. Hossley moved that the House express its appreciation to R. C. Derbyshire, M.D., Santa Fe, for his many years of service and for

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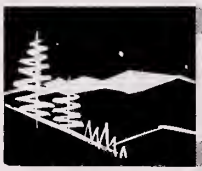
his unusual support to medicine in New Mexico; and that the House express its regrets in regard to his recent illness and wish him a speedy recovery. The motion received unanimous and hearty approval.

John F. Griffin, Chairman, Reference Committee on Miscellaneous Business, was recognized by the Speaker. Dr. Griffin stated, "In view of the unexcelled hospitality of the Otero County Medical Society and their wives extended to us during this meeting, I move that the Secretary be instructed to convey to them our sincere thanks and appreciation for their fine efforts.

"I further move that he express to the Holiday Inn our thanks for the cooperation and service tendered during our stay." The motions were unanimously approved.

There being no further business to come before the House, the Speaker declared the Ninth Interim House of Delegates Meeting adjourned without day.



COLORADO

Appointment to AMA Council On Rural Health

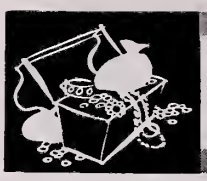
Monroe R. Tyler, M.D., Denver, has been reappointed a member of the Council on Rural Health of the American Medical Association.

The Council works toward the betterment of the health of the rural-urban population through guidance and assistance in development of national programs such as community planning for health facilities and health manpower, planning for emergency medical care and first aid training, for education for personal and community health responsibility, and efficient utilization of rural health care services. The Council sponsors national conferences, health education seminars, assistance in research for rural health improvement, and promotion of health careers information programs for rural youth.

Colorado Physician Volunteers to Treat Civilians in South Viet Nam

Ernest G. Ceriani, M.D., Kremmling Clinic, Kremmling, Colo., was one of fifteen physicians to volunteer their services in South Viet Nam to treat civilians under the AMA Volunteer Physicians for Viet Nam program.

Volunteer physicians serve a 60-day tour of duty at one of 18 provincial civilian hospitals in South Viet Nam. Their services are entirely unpaid except for transportation costs and an expense allowance of $10 a day. Dr. Ceriani will serve in Phan Rang.



MONTANA

New Surgical Organization

Alexander C. Johnson, M.D., Great Falls, announces the organization of the Society of Montana Surgeons. This society is concerned solely with economic and related matters pertinent to the limited practice of surgery and of its various specialties, including anesthesiology. It is not intended to compete with the scientific societies, such as the American College of Surgeons. Membership is limited to diplomates of the various American boards of all surgical specialties, including the American Board of Anesthesiology. Officers elected at the first meeting in Butte on February 4 include Alexander C. Johnson, M.D., president; William J. Hoopes, M.D., Helena, vice president; and H. J. Sannan, M.D., Butte, secretary-treasurer. Inquiries and requests for membership applications may be directed to Dr. Sannan. It is hoped that all eligible men will lend their support to this organization.

UTAH

USMA Briefs

Roger Woods Davis of the University of Utah has been awarded a Foreign Fellowship which will enable him to obtain supervised medical experience in relatively underdeveloped areas of the world, the Association of American Medical Colleges announced. He was one of 31 students to receive the award. The Fellowships are made possible by a grant from Smith Kline & French Laboratories.

The primary objective of the Fellowships is to provide students with an opportunity to benefit from unusual clinical experiences and familiarize themselves with medical, cultural, and social problems different from their own. Doctor Davis will work in Nigeria.

* * * *

Dr. L. D. Nelson of Ogden was appointed recently to a one-year term on the public relations committee of the American Academy of General Practice. The five-man committee maintains close contact with the Academy's public relations program and makes suggestions and recommendations to the board of directors concerning the program. This is the second largest medical organization in the country with 30,000 members.

* * * *

Dr. U. R. Bryner, Salt Lake City physician, has been named to a one-year term on the Committee

on International Affairs of the American Academy of General Practice. Dr. Bryner was president of the AAGP in 1954.

Physicians Honored

Russell M. Nelson, M.D., prominent Salt Lake City physician, was one of six distinguished alumni to receive awards at the annual University of Utah Founders Day Banquet held at the Union Building.

Dr. Nelson is nationally known for his work in heart surgery and burns. He earned his B.A. degree from the University of Utah in 1945, and his M.D. in 1947. He was a post-doctorate research fellow at the National Heart Institute, and a cancer trainee at the National Heart Institute. He was the Markle Scholar in the Medical Sciences, 1957-1959, and won a distinguished service award from the State of Utah in 1956. The University of Utah College of Medicine last year named him to a fellowship in the Medici Publici organization of prominent graduates.

* * * *

L. E. Viko, M.D., was named "Physician of the Year" at the Latter-day Saints Hospital for "quality health care and outstanding service."

A professor's chair at the University of Utah College of Medicine is named for Dr. Viko. He served as vice president of the American Heart Association, and as chairman of the Utah State Board of Health. He was also one of six presented with awards of merit given by the American Heart Association in 1959.

Report on HOPE

W. H. LeCheminant, M.D., told of his experiences on the mercy ship HOPE at a recent meeting of the Dekatos Club at the Riverside Club in Provo.

Dr. LeCheminant spent two months with the ship on the People-to-People project in Ecuador. The ship HOPE is a 100-bed modern American hospital operated by doctors who donate their services. Everything on the ship has been donated by American people or companies.

Its first voyage was to Vietnam in 1961 for an 18 month stay. Since then it has been assigned to many other countries. The trip to Ecuador was the third long voyage. Clinics were set up close to the ship for persons having no other access to medical care. Tuberculosis and hepatitis were very prevalent, he reported.

Each country where the boat stops has to fulfill three requirements: it must be a seacoast town; residents must invite the ship; they must provide transportation for patients and for inland travel of ship personnel. They also have to supply part of the needed food.

"The ship has enough invitations to keep it busy for 20 years," stated Dr. LeCheminant.

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1. Schleif, R.H.: J.A.PH.A., 46:179,1957 *U.S. Pat. No. 3,062,714

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MEETINGS

SECOND SPRING TRAUMA SEMINAR
April 23-26, 1967
Caesars Palace, Las Vegas, Nevada

The theme of this seminar, which is sponsored by the Las Vegas Committee on Trauma of the American College of Surgeons, is **Trauma Care From the Accident Back to the Job.** The Spring Trauma Seminar is held biennially alternating with a Spring Cancer Seminar. A program of wide interest to all who care for trauma victims has been planned.

The faculty represents outstanding individuals in various fields—activities with research and clinical experience in care of the injured: **Clifford Benson, M.D.,** Surgeon in Chief, Children's Hospital of Michigan, Associate Professor of Surgery, Wayne University—**John Boswick, M.D.,** Chief of Koch Burn Unit, Section Head of Hand Surgery, Cook County Hospital, Chicago, Ill.; Instructor of Surgery, Northwestern University — **George J. Curry, M.D.,** Founder and former Chief of Section of Trauma, Hurley Hospital, Flint, Michigan—**Benjamin Drompp, M.D.,** Professor and Head of Division of Surgery, University of Arkansas Medical Center; Chief of Orthopedics, Little Rock V.A. Hospital—**Colonel George Omer,** Chief, Section of Hand Surgery, Brooks Army Hospital, Ft. Sam Houston, Texas—**John Pruvis, M.D.,** Assistant Professor, Division of Neurosurgery, University of Alabama Medical Center—**Raymond C. Reed, M.D.,** Professor of Surgery, Little Rock University Hospital; Chief of Surgery, Little Rock V.A. Hospital—**G. Tom Shires, M.D.,** Chairman, Department Surgery, Southwestern Medical School of University of Texas.

For further information concerning this meeting, contact John W. Batdorf, M.D., 3196 Maryland Parkway, Las Vegas, Nevada 89109.

* * * *

FIFTIETH ANNIVERSARY
GREAT FALLS CLINIC

The Great Falls Clinic will sponsor a symposium on April 22 to commemorate its founding. This symposium will be held in the Deaconess Hospital in Great Falls between the hours of 9:00 a.m. and 5:00 p.m. Among the guest speakers will be: **Richard E. Symmonds, M.D.,** Department of Surgery, Mayo Clinic; **Robert J. Bolt, M.D.,** University of California School of Medicine, Davis, California; **John A. Curtis, M.D.,** Great Falls Clinic; **John H. Lawrence, M.D.,** Donner Laboratory, Berkeley, California; **Paul W. Gikas, M.D.,** Department of Pathology, University of Michigan, Ann Arbor, Michigan; and **Philip R. Lee, M.D.,** Assistant Secretary for Health and Scientific Affairs, U. S. Department of Health, Education and Welfare, Washington, D. C.

INDUSTRIAL HEALTH CONFERENCE

The 11th Annual Western Industrial Health Conference will be at the San Francisco Hilton Hotel, September 29 and 30, 1967. This will be an intradisciplinary meeting, to which are invited professional personnel from fields related to industrial health.

For complete information regarding participation, registration and exhibitions, write: Secretary, Western Industrial Health Conference, E. F. Marriner, M.D., Autonetics Division, North American Aviation, Inc., 3370 Miraloma Avenue, Anaheim, California 92803.

* * * *

MEDICAL AUDIOLOGY

The department of Speech Pathology and Audiology, University of Montana, announced a Seminar in Medical Audiology, June 19-22 at its Missoula campus. A special two-day Workshop in Medical Audiology will be held June 23-24 at Flathead Lake.

Lectures and case demonstrations will be presented by Dr. Francis I. Catlin, Associate Professor of Otolaryngology at Johns Hopkins University School of Medicine.

Recreational and housing facilities for families are available. A limited number of reservations are available, so application should be received before May 1, 1967. Traineeships are offered by the U. S. Office of Education (PL-85-926) to qualified applicants. For further information, write: Dr. Charles Parker, Department of Speech Pathology and Audiology, University of Montana, Missoula, Montana 59801.

* * * *

THORACIC ASSOCIATION TO MEET

The Montana Thoracic Association will hold its annual meeting in Lewistown, April 20-22. The guest clinicians will include **Donald Germann, M.D.,** Professor of Radiology, University of Kansas Medical School, who will discuss "X-ray Diagnosis of Childhood Tuberculosis," "Isotope Studies of the Lung," and "Complications of Pneumonia-Empyema"; **James P. Lilleihei, M.D.,** Associate Professor, Department of Medicine, University of Minnesota, "Gravity and Pulmonary Tuberculosis," "What Does Lung Cancer Look Like?" and "Treatment of Chronic Bronchitis—Emphysema"; and **Suzanne B. Knoebel, M.D.,** Associate Professor of Medicine, Department of Medicine, Indiana University, "Pathophysiology of Pulmonary Hypertension and Cor-Pulmonale," "The ECG in Cor-Pulmonale," and "Management of Heart Failure Associated with Emphysema."

* * * *

CHILDREN'S MEMORIAL HOSPITAL SEMINAR
Omaha, Nebraska May 12-13, 1967
Disorders of Growing Bone
Victor McKusick, M.D.
Professor of Medicine
Johns Hopkins School of Medicine
David Smith, M.D.
Associate Professor of Pediatrics
University of Washington School of Medicine

INTERNATIONAL COLLEGE OF SURGEONS

The North American, Central American and Caribbean Federation of the International College of Surgeons will hold its 32nd Annual Congress at the Americana Hotel in Bal Harbour, Florida, April 30 through May 4. The International College of Surgeons was founded in 1935 by the late Chicago surgeon, Dr. Max Thorek.

Latest advances in the field of cancer, open heart surgery, peptic ulcer, gallbladder, industrial and automobile injuries, fractures, skin grafting of the hands, face and body, and shock will be discussed in formal lectures and in informal luncheon round table meetings, beginning Monday morning, May 1. Dr. Edward R. Annis, Miami surgeon and past president of the American Medical Association, who is considered by many as medicine's most outstanding verbal warrior, will deliver the Arnold Jackson memorial luncheon address.

A special feature at the Miami session will be a Spanish program arranged expressly for all Spanish-speaking physicians in the Miami area. Chairman of this program, beginning at 9:00 a.m. Tuesday, is Dr. Joseph M. de los Reyes of Los Angeles. Spanish-speaking physicians will deliver lectures dealing with emergency operations on the newborn, surgery of congenital glaucoma and surgical treatment for neuralgia, as well as many other subjects.

Many distinguished surgeons, both from the United States and abroad, will give lectures and participate in panel discussions.

CARDIOVASCULAR DISEASE CONFERENCE

The Montana Heart Association will sponsor its 10th Annual Postgraduate Conference on Cardiovascular Disease at Jorgenson's Holiday Inn, Helena, May 5-6. The speakers at this conference will include **William Dock, M.D.**, New York, New York; **C. Hilmon Castle, M.D.**, Salt Lake City, Utah; **Robert King, M.D.**, Seattle, Washington; and **Yen Wang, M.D.**, Minneapolis, Minnesota.

* * * *

American College of Physicians Postgraduate Courses, 1967

CLINICAL APPLICATIONS OF RECENT ADVANCES IN ELECTROPHYSIOLOGY OF THE HEART

May 22-26
New York University School of Medicine and Medical Center
New York, New York

INTERNAL MEDICINE: CURRENT PHYSIOLOGICAL CONCEPTS IN DIAGNOSIS AND TREATMENT

June 12-16
University of Cincinnati College of Medicine
Cincinnati, Ohio

CLINICAL APPLICATIONS—RECENT ADVANCES IN PHARMACOLOGY

June 19-21
University of Iowa
Iowa City, Iowa

Rocky Mountain Cancer Conference • Denver • July 14-15, 1967

Denver, Colorado, the Mile High City, is once again the site of the Rocky Mountain Cancer Conference, July 14-15, at the Brown Palace-West Hotel. The 21st Annual Rocky Mountain Cancer Conference will feature some of the nation's most distinguished speakers on the subject of cancer during the two days it will be in session.

Morning symposia will deal with "What's New in Cancer" and "Cancer of the Biliary System and Its Related Structures". The afternoon session of the first day will be devoted to scientific papers by guest speakers with the second afternoon devoted to an "Information Please" session.

Dr. Milford O. Rouse, now president-elect of the American Medical Association, and Dr. Ashbel C. Williams, president of the American Cancer Society, will participate in the Conference which is held annually in Denver, Colorado, and co-sponsored by the Colorado Division of the American Cancer Society and the Colorado Medical Society.

Speakers on the two-day scientific program include: Arthur J. Hunnicutt, M.D., a Surgeon from Oakland, California; William T. Moss, M.D., Director, Therapeutic Therapy, Chicago Wesley Memorial Hospital; William O. Russell, M.D., Chief of Pathology, M. D. Anderson Hospital, Houston; Wendell M. Stanley, Ph.D., Nobel Prize winning Virologist, University of California, Berkeley; and Richard J. Reitemeier, M.D., Chairman of the Section on Internal Medicine, Mayo Clinic, Rochester.

Further information may be obtained by writing ROCKY MOUNTAIN CANCER CONFERENCE, 1809 East 18th Avenue, Denver, Colorado 80218.

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Said Stan,
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References: 1. Based on 1966 data from independent physicians' market survey organization. 2. Scal, J. C.: Eye Ear Nose & Throat Month. 38:738 (Sept.) 1959.

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Copper (from copper sulfate)	0.33 mg.
Manganese (from manganese sulfate)	0.33 mg.
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Sperling, I.L.: 3 Years' Experience with Oxyphenbutazone in the Treatment of Rheumatic Disorders, Applied Therapeutics 6:117, 1964.	76.9% of 407 patients
Watts, T.W., Jr.: Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73:65, 1966.	84.6% of 39 patients

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Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

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OBITUARIES

UTAH

Max W. Stewart, M.D., Payson physician and surgeon, died Monday, February 20, 1967, at the age of 59.

Dr. Stewart was born in Benjamin, Utah, on June 16, 1907, the son of Dr. L. D. and Nellie Buckley Stewart. He graduated from the Brigham Young University and subsequently attended the University of Utah Pre-Medical School, and graduated from the Marquette Medical School in 1934. He then returned to Utah to practice medicine. He served as the mine doctor for Tintic Standard Mines at Eureka for eight years, and then moved back to Payson in 1944 where he practiced with his father until the time of his father's death. He was a member of the Utah State Medical Association, Utah County Medical Society, and the American Medical Association.

Dr. Stewart is survived by two sons and one daughter: Max Lynn Stewart, Salt Lake City; Thomas Stewart of Payson; and Mrs. John (Sara) Anderson, Springville; three grandchildren, and one sister, Mrs. Brent (Lynell) Lyman, Provo.

* * * *

Dr. Claude Lester Shields, past president of the Utah State Medical Association, died February 5, 1967, in a Salt Lake City hospital after a long illness. He was 80 years of age.

Dr. Shields graduated from the University of Utah in 1910, and from the Rush Medical School, University of Chicago, in 1912. He interned at the Salt Lake County General Hospital and was Assistant County Physician, 1914-1915. He served on the staff of Holy Cross Hospital beginning in 1914, and was chief of staff in 1942.

He served as president of the Salt Lake County Medical Society in 1935, and the Utah State Medical Association in 1938.

Dr. Shields had a long record of civic achievements and service. During his career he served as director of the Family Service Society, the Children's Service Society, the Utah Tuberculosis Society, and was a fellow in the American College of Surgeons.

Dr. Shields was a member of the American Medical Association, International College of Surgeons, and the Salt Lake Surgical Society. He participated in may community organizations including the Salt Lake Kiwanis Club, Bonneville Knife and Fork Club, the Woodmen of the World, Odd Fellows Utah Lodge No. 1, Masonic Lodge, Mt. Moriah No. 2, the El Kalah Shrine, and the First Congregational Church.

After suffering a stroke in 1948, Dr. Shields continued his practice on a part-time basis. In 1962 he was honored at the annual Awards Banquet of the Utah State Medical Association for his long service on the Board of Trustees of Blue Cross from 1949 to 1962. He was a member of the Board of Directors of Blue Shield from 1935 to 1937, and again from 1945 to 1951.

Dr. Shields is survived by his widow in Salt Lake City; a son, Lester D. Shields; two daughters, Mrs. E. R. (Carol) Rowland of Salt Lake City and Mrs. Richard (Kathleen) Koeb of Phoenix, Arizona.

MONTANA

Charles R. Thornton, M.D., one of the founders of the Thornton Hospital in Missoula, died at his home in Loma Linda, California, early in February. Dr. Thornton was born in Jeffersonville, Ohio, in 1879. He received his M.D. degree from the American Medical Missionary College in Battle Creek, Michigan, in 1905 and was licensed to practice medicine in Montana in 1906. Before establishing his practice in Missoula, he practiced in Corvallis and in Hamilton. He retired from the active practice of medicine in 1947.

* * * *

Robert Crittenden Davis, M.D., formerly of Great Falls, died in a Long Beach, California, hospital on February 13, 1967. Dr. Davis was born in Smythe County, Virginia, July 13, 1892. He received his M.D. degree from the University of Tennessee in 1916. Following two years of active duty with the Medical Corps of the U. S. Army, Dr. Davis was engaged in the general practice of medicine in Glendive. One year later, he became a member of the medical staff of the Anaconda Company and of the Great Northern Coal Mines. In 1925 he opened his office for the general practice of medicine in Great Falls and was later associated with C. E. Magner, M.D., and L. L. Maillet, M.D. Dr. Davis continued the active practice of medicine in Great Falls until his retirement in 1956.

COLORADO

Dr. Elmer Lee Timmons died February 23, 1967, at the Glockner-Penrose Hospital in Colorado Springs. He was 89 years of age at the time of his death.

He was born October 31, 1877, at Graham, Texas, the third in a series of six siblings, all boys. Both of his parents were of Scotch-Irish extraction and had moved from Georgia to west Texas at the end of the Civil War, after their home had been burned out by Sherman's Army on its march through Georgia to the sea. His father bought land in Texas and for a time was a school teacher, a merchant, and served as a county judge.

When he was 16 years of age, Dr. Timmons decided to see the world, and for three years he worked as a railroad construction worker, a cowboy, a hotel waiter, and a railroad detective. Having satisfied his yearning for travel and adventure, he decided to be a doctor, and returned to Texas to finish his high school training. He studied medicine at the University of Louisville,

where he received his M.D. degree in 1905. Shortly thereafter he began the practice of medicine in Colorado Springs, eventually limiting his practice to obstetrics and pediatrics.

He was a member of the El Paso County Medical Society, the Colorado Medical Society, the American College of Surgeons, and the American Academy of Pediatrics. He was also a 32nd Degree Mason, a member of the El Paso Club, Winter Night Club, Torch Club, the Rotary Club, and the Presbyterian Church.

During his long years of medical practice in Colorado Springs, Dr. Timmons served for a time on the City Council and was an active participant in other social and civic affairs of his community. He established the Colorado Springs Well Baby Clinic and operated this clinic almost singlehandedly for over 20 years. In addition to this he was active in the affairs of the Colorado Springs Nutrition Camp and the Child Welfare Bureau of Colorado Springs and El Paso County. He was a delegate to President Hoover's White House Conference on Child Health and Protection in 1931.

In 1918 Dr. Timmons joined the Army Medical Corps and was appointed to the staff of Fitzsimons Army Hospital in Denver. Following his discharge from the Army with the rank of Captain in 1919, he resumed his practice in Colorado Springs.

Dr. Timmons was a gifted conversationalist and his dry wit and sharp sense of humor made him a famous raconteur and story teller, greatly loved by his patients, his colleagues in the practice of medicine, and by the people of his community.

He is survived by his widow, Margaret Timmons, a daughter, Mrs. Thayer Tutt, a granddaughter, Mrs. Jack McColl, and two great grandchildren.

COURSE IN MEDICAL AND SCIENCE WRITING

Seminars on the writing of medical and other scientific manuscripts will be held May 12-14 at Big Sur, California, under the joint sponsorship of the Esalen Institute and the Northern California Chapter of the American Medical Writers' Association.

The program will alternate between lectures and workshops. W. D. Snively, Jr., M.D., a former president of AMWA, will teach a course in Sentence and Paragraph Structure. In one of the workshop sessions, which will be under the direction of Paula Harris, president of the Northern California AMWA, and Harley Messinger, M.D., a past president, participants will be required to write an abstract of an assigned article, and the abstracts will then be criticized.

Another workshop will deal with Intensive Editorial Review of a Manuscript, and a third will take up Approaches to the Subject.

Membership in the sponsoring organizations is not necessary for enrollment.

For registration or further information, contact: Harley Messinger, M.D., Ph.D., 3029 Benvenue Avenue, Berkeley, California 94705.

THE WASHINGTON SCENE

A monthly news summary from the nation's capital by the Washington Office of AMA

The Department of Health, Education and Welfare stated in a special report that both hospital charges and physicians' fees increased sharply last year.

A continued increase in health care costs was predicted in the report ordered last August by President Johnson.

Drugs were not a significant factor in the recent accelerated increase in health care prices, the report said. But it added that "drug prices are higher than they would be if there were more vigorous competition at either the manufacturing or drugstore level."

As for the two major components in the Medical Care Index, the report said:

—Physicians' fees, which had been rising about 3 per cent a year in 1960-65, went up 7.8 per cent in 1966—the biggest annual increase since 1927.

—Hospital daily charges, rising about 6 per cent a year between 1960 and 1965, went up 16.5 per cent in 1966—the largest annual increase in 18 years.

The increase in doctor fees was attributed to a combination of basic factors: more people are seeking doctors' services more often and the number of active physicians is increasing relatively slow. The study found no evidence that Medicare, which went into effect last July 1, was a major factor in the rise in doctors' fees.

The increase in hospital charges was attributed largely to rising wages, which account for two-thirds of hospital costs, and increases in the price of things hospitals buy. The wage rise has not been offset by increased productivity, the report said, and rising standards of care in hospitals have required more expensive equipment and facilities.

Meantime, Robert J. Myers, the Social Security

HOSPITAL
LIFE
DISABILITY
•
GROWING
WITH THE
ELEVEN
WESTERN STATES

Administration's chief actuary, told the House Ways and Means Committee that hospital costs had risen much faster than the Administration anticipated since the Medicare plan went into effect. If they continue their upward spiral, the costs will eat away the safety margin included under the Medicare financing plan, Myers said.

The HEW report held out little hope for an early end to medical price increases. However, it recommended a series of actions "to slow down these increases and to promote the efficent use of medical care resources."

Recommendations in the report included:

—Comprehensive community health care systems should be developed, demonstrated, and evaluated.

—Group practice, especially prepaid group practice, should be encouraged.

—Private and public health insurance plans should be broadened to include more alternative types of medical care.

—States should move quickly to establish and support strong health planning agencies at the state and local levels.

—Cost-reducing methods of reorganizing the delivery of services in hospitals and other providers of health services should be developed, demonstrated, and implemented.

—Federally supported health care programs should be used to train physician assistants, evaluate their performance, and disseminate the results.

—Federal funds available under the Health Professions Educational Assistance Amendments of 1965 should be used to support and encourage innovations in health professions' education and training which promote the efficient practice of medicine.

—HEW should undertake an intensive examination of frequently prescribed drugs to assess the therapeutic effectiveness of brand name products and their supposed generic equivalents.

—The Food and Drug Administration should provide doctors with authoritative information of the efficacy and side effects of all drugs.

—The HEW should call a national conference of leaders of the medical community and public representatives to discuss ways to improve the quality and efficiency of the medical care delivery.

To carry out the recommendations in the report and allied directives from Johnson, HEW Secretary John W. Gardner said he would take a number of actions, including establishment of a National Center for Health Services Research and Development and calling of a national conference on medical care costs.

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Auscultation of the Heart: By Abe Ravin. 2d ed. Chicago, 1967, Year Book. 242 p. Price: $8.00.

The Chemistry and Therapy of Industrial Pulmonary Diseases: By Richard C. Browne. Springfield, Ill., 1966, Thomas. 121 p. Price: $6.50.

The Chromosome Disorders: By Gordon H. Valentine. London, 1966, Heinemann Medical. 129 p. Price: $7.00.

The Circulatory Response to Muscular Exercise in Man: By Arne Carlsten. Springfield, Ill., 1966, Thomas. 129 p. Price: $6.50.

Clinical Tuberculosis: Edited by Karl H. Pfuetze. Springfield, Ill., 1966, Thomas. 436 p. Price: $14.75.

Complications in Surgery and Their Management: Edited by Curtis P. Artz. 2d ed. Phila., 1967, Saunders. 888 p. Price: $24.00.

The Development of the Infant and Young Child: Normal and Abnormal: By Ronald S. Illingworth. 3d ed. Balt., 1966, Williams & Wilkins. 378 p. Price: $10.00.

The Diagnosis of Stupor and Coma: By Fred Plum. Phila., 1966, Davis. 197 p. Price: $7.50.

Diagnostic Ultrasound: Edited by Charles C. Grossman. N. Y., 1966, Plenum Press. 519 p. Price: $11.50.

Dilemmas in Drug Therapy: By Harry Beckman. Phila., 1967, Saunders. 404 p. Price: $11.50.

Disturbances in Heme Synthesis: By Ludwig Heilmeyer. Springfield, Ill., 1966, Thomas. 236 p. Price: $10.50.

Essentials of Urography: By Anthony F. Lalli. Springfield, Ill., 1967, Thomas. 150 p. Price: $12.75.

The Experience of Psychotherapy: By William H. Fitts. Princeton, N. J., 1965, Van Nostrand. 188 p. Price: $1.95.

Explorations in Human Potentialities: Edited by Herbert A. Otto. Springfield, Ill., 1966, Thomas. 558 p. Price: $17.00.

Health Is a Community Affair: Report by National Commission on Community Services. Bethesda, Md., 1966. 309 p. Price: $2.25.

Hemorrhagic Diseases and Thrombosis: By Armand J. Quick. 2d ed. Phila., 1966, Lea & Febiger. 460 p. Price: $12.00.

The Kidney: Edited by F. K. Mostofi. Balt., 1966, Williams & Wilkins. 592 p. Price: $19.75.

Kidney and Electrolytes: By Norman Deane. Englewood Cliffs, N. J., 1966, Prentice-Hall. 198 p. Price: $9.00.

Medical Care of the Adolescent: By J. Roswell Gallagher. 2d ed. N. Y., 1966, Appleton. 489 p. Price: $12.00.

The Ocular Fundus in Neurologic Disease: By William F. Hoyt. St. Louis, 1966, Mosby. 128 p. Price: $35.00.

Pathology of the Fetus and Infant: By Edith L. Potter. 2d ed. Chicago, 1961, Year Book. 670 p. Price: $22.00.

Physiology of the Digestive Tract: By Horace W. Davenport. 2d ed. Chicago, 1966, Year Book. 230 p. Price: $8.50.

Pneumoencephalography and Cerebral Angiography: By Bernard S. Epstein. Chicago, 1966, Year Book. 349 p. Price: $20.00.

The Psychology of Clothes: By J. C. Flugel. N. Y., 1966(?), International Univ. Pr. 257 p. Price: $5.50.

Recent Results in Cancer Research: Berlin, N. Y., 1965-1967, Springer-Verlag. 8 vols.

Surgery of the Stomach and Duodenum: By Claude E. Welch. 4th rev. ed. Chicago, 1966, Year Book. 408 p. Price: $10.50.

Surgical Bleeding: Edited by Alexander W. Ulin. N. Y., 1966, Blakiston. 532 p. Price: $23.50.

The Thymus: By Ciba Foundation. Boston, 1966, Little, Brown. 538 p. Price: $15.00.

Touch, Heat and Pain: Ciba Foundation. Boston, 1966, Little Brown. 389 p. Price: $14.00.

Urinary Diversion: By Theunis Coetzee. London, 1966, Livingstone. 36 p. Price: $3.75.

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Book Reviews

Primer on Prematurity and High-Risk Pregnancy: By S. Gorham Babson and Ralph C. Benson. St. Louis, 1966, Mosby. 194 p. Price: $10.50.

The authors have considered the many facets of pregnancy complications concerned in premature delivery, the current methods of diagnosis and treatment, and the care of the newborn after birth.

This book is an excellent summary of the vast scientific data accumulating on this subject. It begins with prematurity and low birth weight and relates this to the high-risk pregnancy. The maternal, paternal and fetal conditions associated are brought in. There is an excellent list of the specific diseases and drug hazards that effect the fetus. They consider, also, the reduction of the perinatal casualty by extension of gestation and also are concerned with pregnancy complications requiring early delivery.

On the pediatric side, they begin with the care of the high-risk infant at birth and follow this with an excellent summary of nursery care. The physiologic handicaps and disorders effecting the premature infant, including infections, are nicely discussed.

I am recommending this book highly as a quick review and time saver for the busy practitioner.

G. T. Foust, Jr., M.D.

Bone Tumors: General Aspects and Data on 3,987 Cases: By David C. Dahlin. 2d ed. Springfield, Ill., 1967, Thomas. 285 p. Price: $16.00.

This book combines abundant information in very easily assimilated form with small size and weight. The pages measure 8¼ x 11 inches; the book is only three-fourths of an inch thick. Yet the concise word descriptions are double-spaced as are the references at the end of the chapters. Dr. Dahlin has used high quality photographs of roentgenograms, gross specimens and well-selected light microscopic fields, as well as well-made diagrams to amplify and complement his verbal information. This second edition adds the material gained from examining 1700 additional tumors to that available on 2000 reported in the first edition of the book. All cases are from the Mayo Clinic. There is a good chapter on odontogenic tumors new in this edition which pathologists, particularly, should appreciate.

S. M. Prather Ashe, M.D.

The Practice of Cystoscopy: By David Rosenbloom. Springfield, Ill., 1966, Thomas. 210 p. Price: $9.75.

This exposition fulfills a need in the field of urology which, heretofore, has been frequently neglected. A manual on the technic of the most common instrumentation in the practice of urology should be invaluable to the beginning endoscopist.

The use of the book will be limited but should be extremely helpful to the intern or resident early in his training.

The organization of this book is excellent and there are several very strong features. Perhaps the best of these is the description of the handling of the instruments in the insertion of the cystoscope, the performance of the bladder survey, and the passage of ureteral catheters. The photographs and illustrations are lucid and very complimentary to the text. Another very strong feature is the description of the preparation of the patient and the psychological implications of instrumentation of this important area of the body. The examples of consent forms and a description of a sample operative note are worthwhile.

There are several notable weaknesses in this book. The material is not presented succinctly and emphasis is achieved by redundancy and repetition of statements. There are numerous examples of this. Many statements are made which are the personal opinion of the author and perhaps do not reflect the majority opinion of urologists. The interpretation of studies and the treatment of pathologic conditions in urology is often not clear cut; yet the author is very dogmatic in some of these areas. Another weakness is the lack of emphasis in urethroscopy as part of the complete cystoscopic examination, both in females and males.

Careful instruction in the indications for any surgical procedure is important for a beginner. More emphasis could be made in this area. Another point which could be expanded concerns the bacteriologic aspects of manipulating urologic patients who are frequently infected at time of contemplated instrumentation.

The author has compiled a manual for the use of beginning cystoscopists. I would strongly recommend this book to all interns and residents who are going to be instructed in the art of cystoscopy.

Noel E. Sankey, M.D.

Obstetrics and Gynecology: By J. R. Wilson, C. T. Beecham and E. R. Carrington. 3d ed. St. Louis, 1966, Mosby. 776 p. Price: $15.50.

This text provides an overall view of obstetrics and gynecology without becoming too deeply involved in the mechanics. The author's intent to supply "a broad base of information concerning all the emotional and physiologic phases of reproduction" is adequately met.

Under "Diagnostic Methods," immunologic tests for pregnancy and ultrasound are added in this third edition. There are many good thoughts under the heading, "Psychology and Life Periods of Women." More thought should be given this area by those of us who practice medicine. There is a very complete outline for amenorrhea, including a schematic diagram of diagnostic procedures for the study of same. Sexual responses of women, dysmenorrhea, and premenstrual tension have been included in one chapter, which also includes the table of anatomic sexual responses of the female after Masters.

Under the section "Fertilization; Development, Physiology and Disorders of the Placenta," some of the basic information on genetics and chromosomal abnormalities have been included.

A new chapter has been added, "Control of

Conception," which mentions the available methods; however, the discussion of hormonal contraception does not specifically mention sequential drug contraception. I also believe more mention should have been made of the problems associated with the different types of IUCD's. The chapter on trophoblastic diseases has been rewritten.

In the chapter, "The Diagnosis and Duration of Pregnancy and Prenatal Care," the authors state "Good pregnancy care can and should be provided by family physicians who are willing to devote time to evaluation of prenatal patients and to the careful consideration of their problems and their pregnancies." I wonder if in actuality the busy family physician has the time to do this.

The chapter on "Toxemias of Pregnancy" is rather limited for such an important subject. The chapter on "Analgesia and Anesthesia" includes a good discussion of paracervical block with a diagram and many good thoughts on analgesia and anesthesia in general. The chapter, "Care of the Infant During Labor and After Delivery," covers care of the infant during pregnancy, drugs used on the pregnant patient, and a discussion of erythroblastosis resulting from both Rh and ABO incompatibility.

The discussion of forceps delivery is very limited and specific names of forceps are not mentioned. The chapter on malignant cervical lesions is clear cut, concise and presents good basic information. This edition includes staging of carcinoma of the cervix from H. L. Kottmeiere, Int. Federat. Gyn. & Ob. 1963.

The authors in discussing diseases of the vulva employ the newer terminology of primary vulvar atrophy and lichen sclerosus et atrophicus replacing kraurosis and leukoplakia, respectively.

The third edition compared wtih the second brings newer concepts, diagnostic measures and therapeutic regimes to those who read it. Many good references are available throughout the book. I believe this edition is a more valuable general medical text than its predecessor; the authors have provided good basic information on obstetrics and gynecology and are congratulated for work well done.

Donald A. Bennallack, M.D.

Resuscitation of the Newborn Infant: Edited by Harold Abramson. 2d ed. St. Louis, 1966, Mosby. 411 p. Price: $16.50.

It is a pleasure to review this second edition of "Resuscitation of the Newborn Infant," edited by Harold Abramson, M.D., and sponsored by the Special Committee on Infant Mortality of the County of New York.

Evidence of increased interest in improving resuscitative procedures lies in the fact that Children's Hospital has loaned its well worn copy of the movie based on that committee's efforts to 18 hospitals in Colorado and 16 more hospitals throughout Kansas, Nebraska, New Mexico and Wyoming during the past two years.

The authors make the correct assumption that this important area of medicine suffers from lack of basic information, sparse experience and a curious timidity to do what has seemed obvious since the biblical admonition, "And the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life; and man became a living soul."—Genesis 2:7.

The book contains an excellent introduction to problems of reproductive loss and the importance of the utilization of standard terminology in making comparative interpretations of perinatal statistics. At a time when authors in several lay publications are deriving much of their exercise by leaping to conclusions based on slight differences in neonatal death rates between major countries throughout the world, it is imperative that the physician in the United States increase his awareness of the important subtleties of collection and expression in the perinatal numbers game. The value of keeping accurate statistics was brought into shocking focus a few years ago when thalidomide was the fetal scourge in those same countries with lower neonatal death rates. More subtle reflections of fetal damage could easily slip by at the present time because of a generalized laxity in the sharp reporting of perinatal facts and figures. One needs only to look at the firm action taken by the Province of Quebec in making perinatal mortality studies statutory to realize the pressure that can be brought to bear when the State decides to take up what the physician had assumed was his responsibility.

The discussion of the physiology and biochemistry of asphyxia by L. Stanley James is a classic and rightfully belongs in a cover of its own. Dr. James has that exciting ability to make physiology swing and to neatly blend basic understandings and practical considerations.

Some following chapters tend to be rather categorical but nevertheless contain an extensive source of information. The chapter on resuscitation procedures in the delivery room should be required reading for all personnel who work in the delivery room. One practical point in regard to equipment is inclusion of two laryngoscope blades; one premature infant blade and one larger blade for use

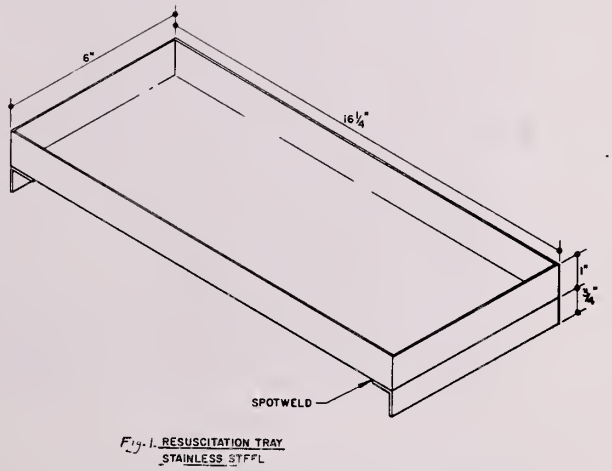

Fig. 1. Resuscitation tray, stainless steel.

with the macrosomic infant in whom a premature infant blade merely disappears. The point is well taken that laryngoscopic technic is essential for the obstetrician, the pediatrician, as well as the obstetric nurse. The asphyxiated infant could care less about the letters after the resuscitationist's name.

Another practical matter in regard to equipment is the importance of keeping it in a simple and tidy place. A resuscitation tray was devised by Drs. Richard Young, Al Woolever, and this reviewer, which included flanges on the underside so that it fits neatly to the top of the ubiquitous Kreiselman resuscitator (Fig. 1). This keeps the resuscitation equipment within easy reach and from getting lost in the swaddling clothes.

Another service that this book provides is a comparison of the many types of mechanical aides to assist ventilation in newborn infants. Considerable emphasis is placed on a short (two-page) history form summarizing pertinent gestational and perinatal events for inclusion in the newborn infant's record. This is one of a series of recommended forms that has been presented in an effort to illuminate that darkest period of most people's lives—the hours just before, during, and after birth. The Newborn Center at Children's Hospital has prepared a much simpler form to assist the referring physician in transmitting essential information about the mother and her infant. A form such as this should be standard throughout the State or region.

Doctors Abramson and Eichenwald present an eloquent brief for a Recovery Nursery for Newborn Infants. Such a sorting place for newborn infants will undoubtedly become as standard in future hospitals as labor rooms are today. As we understand more about the early detection and management of newborn problems, we are more impressed with the fallacy of simply sorting newborn infants into big ones and little ones on the basis of weight alone. After a period of observation in such a Recovery Nursery, the infant is either transferred to an Intensive Care Unit in that hospital or referred to a Newborn Center for care or moved into the regular nursery or to his mother's side. This area is an extremely important one and demands the inclusion of very sophisticated and knowledgeable nursing personnel.

This Second Edition contains newer information on the anemias and the infections of newborn infants that are thoroughly done.

Finally, in keeping with the scientific theme of this book, Chapter 21 presents a glimpse of the many investigative and educational programs which are focusing on current perinatal problems.

As one reads this presentation about resuscitation of the newborn infant, there are times when he feels that the book tells him more about resuscitation than he really cares to know. Nevertheless, the book should be a standard reference on the shelf of every generalist, obstetrician, and pediatrician with an interest in the newborn, for the book is best summarized in the last sentence—"This is the present story of resuscitation of the newborn infant—what we now know and what we do not know."

L. Joseph Butterfield, M.D.
Director, The Newborn Center
Children's Hospital, Denver

Announcement

Jane Nugent Cochems Competition

The University of Colorado School of Medicine announces the Sixth Annual Cochems Competition, funds for which were provided in the will of the late Mrs. Jane Nugent Cochems. A prize of $2500 will be awarded to the author of the best paper in the field of "Thrombophlebitis and Basic Vascular Problems." Basic vascular problems under consideration in this instance should be concerned with the underlying mechanisms or processes of vascular disease, particularly those associated with thrombosis, but not necessarily restricted to it.

The competition is open to all persons holding the doctorate degree and entries must be received in triplicate, including all charts, illustrations and photographs, on or before *November 15, 1967.* For income tax reasons, eligibility is limited to those physicians who are subject to U. S. income tax regulations.

No entry blank or application form is required. There are no restrictive rules regarding length or format of the manuscript, joint authorship, or inclusion of such materials as pictures, charts, figures, etc. It is not required that the paper include results of original experimental work, nor that it be based on personal clinical experience. All manuscripts must be typed with double spacing and each copy together with accompanying illustrations, etc., must be submitted in a folder or cover. On request, the original copy of the manuscript will be returned if accompanied by a stamped, addressed envelope. Papers will be judged on originality, content, clarity, and critical value.

Inquiries regarding the competition and all manuscripts should be submitted to Dr. John J. Conger, Vice President for Medical Affairs and Dean, School of Medicine, University of Colorado Medical Center, 4200 E. Ninth Avenue, Denver, Colorado 80220.

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This endeavor has been warmly endorsed by the American Nurses Association and other professional organizations. We feel sure that such a program, bringing skilled nursing care to the bedside of the cancer patient, will be enthusiastically received by the medical profession.

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MEDICAL SCHOOL NOTES

University of Colorado Medical Center

The Colorado and Metropolitan Associations for Retarded Children presented the University of Colorado a $7,000 gift toward construction of the John F. Kennedy Child Development Center at the CU Medical Center in Denver. The Kennedy Center is being built with private and federal funds as part of a nationwide program of university-affiliated institutes for the diagnosis, study and treatment of mental retardation.

Construction began last week on the Kennedy Center, a five-story and basement structure which also will house the B. F. Stolinsky Research Laboratories. The center is planned for the diagnosis, evaluation, treatment and study of children suffering from mental retardation, brain-damage, multiple handicaps and other developmental problems.

In addition to the Stolinsky Research Laboratories, facilities in the building will include two nursery schools; rooms for medical examination, play and speech therapy, occupational and physical therapy, interviews with patients and families, and observation; a library, micro-chemistry laboratories; closed-circuit television; a perception laboratory and a soundproof audiology room.

* * * *

Dr. C. Wesley Eisele, associate dean for postgraduate education in the University of Colorado School of Medicine, is editor of a newly published professional book, "The Medical Staff in the Modern Hospital," described as the first work in its field. The book was published by the Blakiston Division of the McGraw-Hill Book Co. of New York City. It is based on papers presented to four conferences Dr. Eisele directed for the CU School of Medicine which pioneered in the field of postgraduate education for medical staff leaders in community hospitals. Contributors to the new volume are 55 of the conference speakers, each an expert in his field, discussing a wide range of topics related to the organization and function of a hospital staff.

Dr. Eisele has been a member of the CU medical faculty since 1951. He holds M.S. and M.D. degrees from the Northwestern University and is a diplomate of the American Board of Internal Medicine and a fellow of the American College of Physicians. He received the Certificate of Meritorious Service from the American Academy of General Practice in 1961 and last year was awarded an honorary fellowship in the American College of Hospital Administrators.

* * * *

Final budget recommendations of the Colorado Commission on Higher Education, if adopted by the State Legislature, would force new cutbacks at Colorado General Hospital and curtailments in School of Nursing enrollment, according to Dr. John J. Conger, University of Colorado vice president for medical affairs. In a summary analysis of the commission's recommendations, Dr. Conger reported the proposals fall nearly a half-million dollars short of "minimal obligations" at the CU Medical Center in Denver.

The 1967-68 budgets proposed by the commission would make nearly every phase of Medical Center operations "extremely difficult" in terms of meeting community and Civil Service wage levels and rising hospital costs, Dr. Conger said, but the shortages would create particularly acute problems for Colorado General and the School of Nursing.

University of Utah College of Medicine

The Damon Runyon Memorial Fund for Cancer Research, Inc., has awarded a grant of $22,700 to Dr. Charles P. Miles, Department of Pathology, University of Utah College of Medicine, for support of new cancer research.

Dr. Miles' project, labeled "Pathological Changes of the Nucleus and Chromosomes in Primary Cancer," will open a new area of cancer research at the university. Dr. Miles says he knows of only two other projects similar to it in the world. The period of the grant is from April 1 to March 31, 1968. Two other physicians will join Dr. Miles in the research.

This will be the third year that Dr. Miles has received support from the Damon Runyon Memorial Fund. He came to the university recently from the Sloan Kettering Institute, Memorial Center for Cancer, New York.

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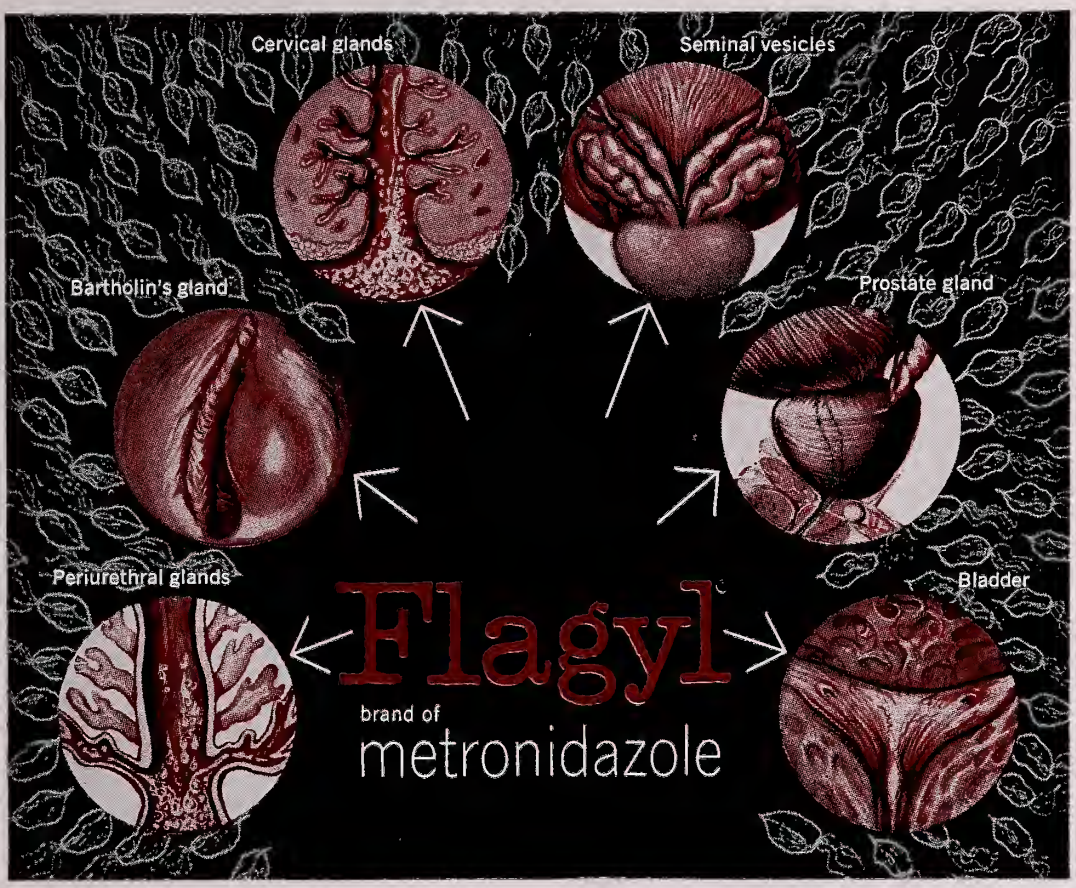

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In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

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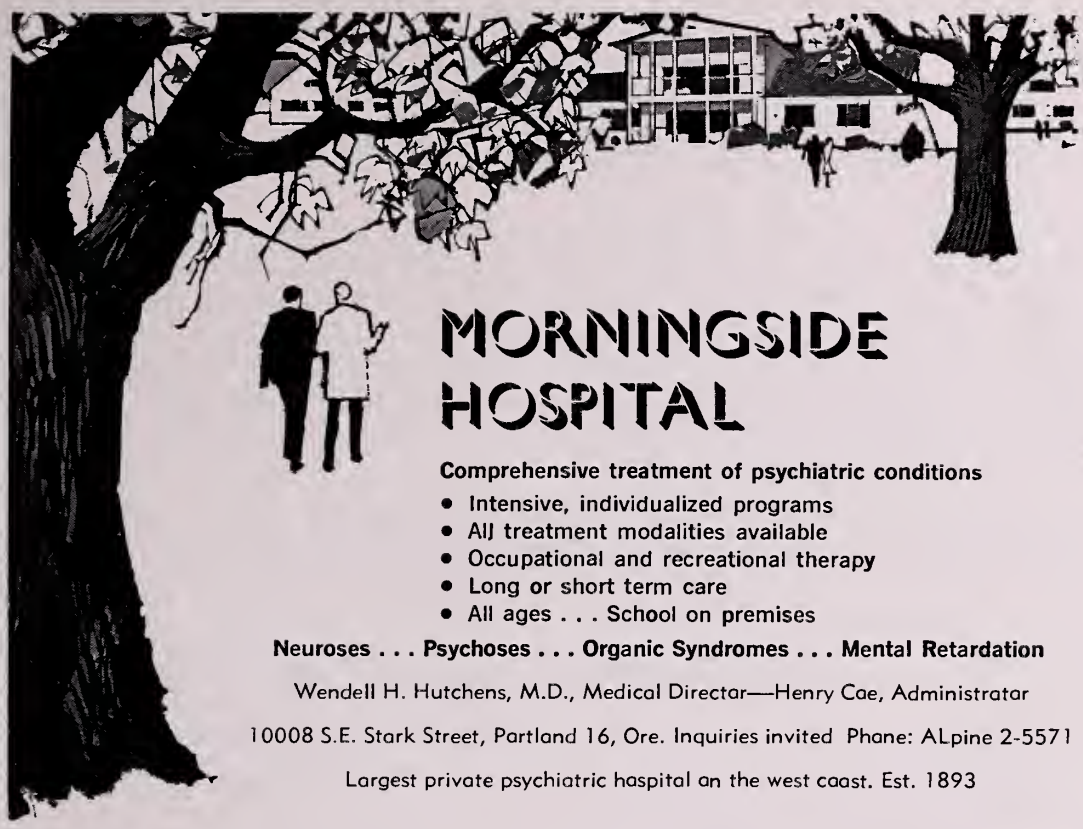

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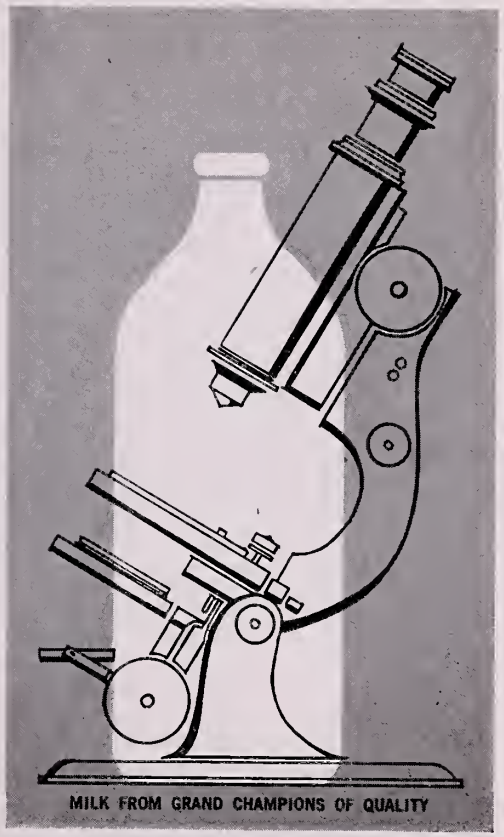

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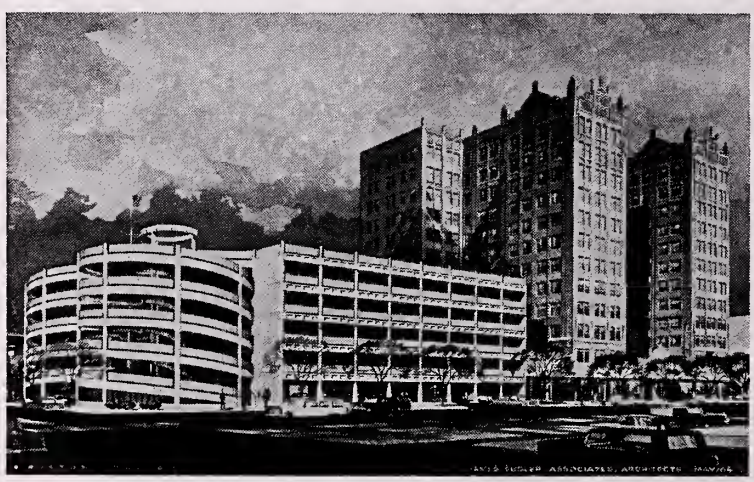

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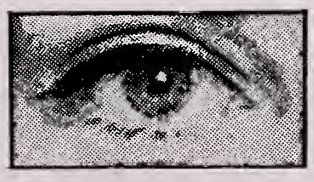

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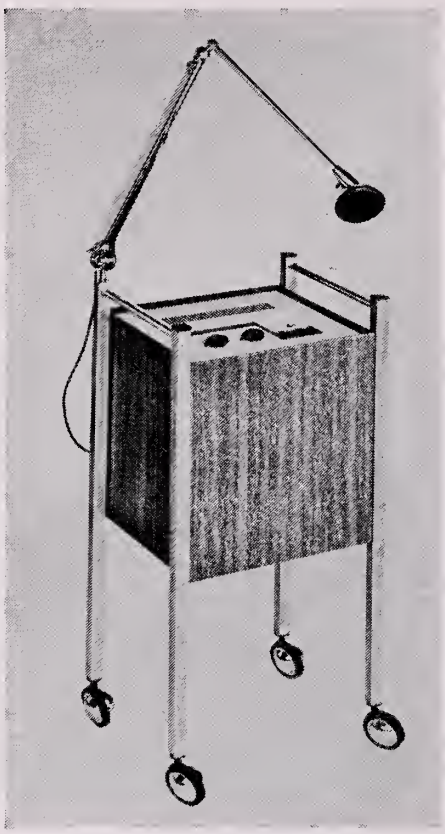

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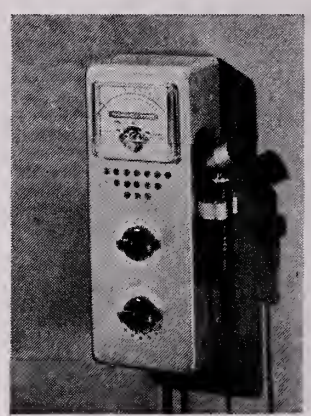

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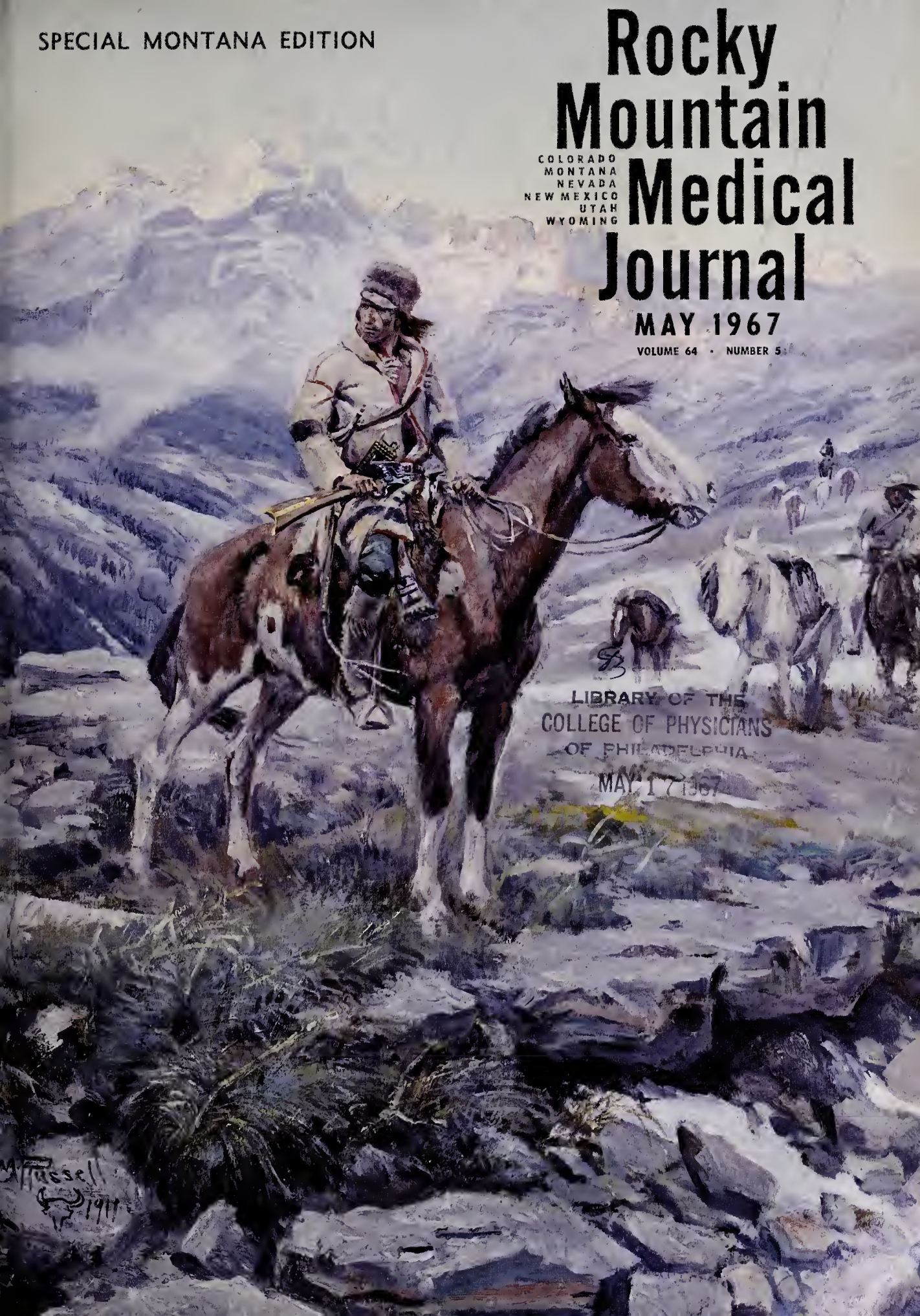

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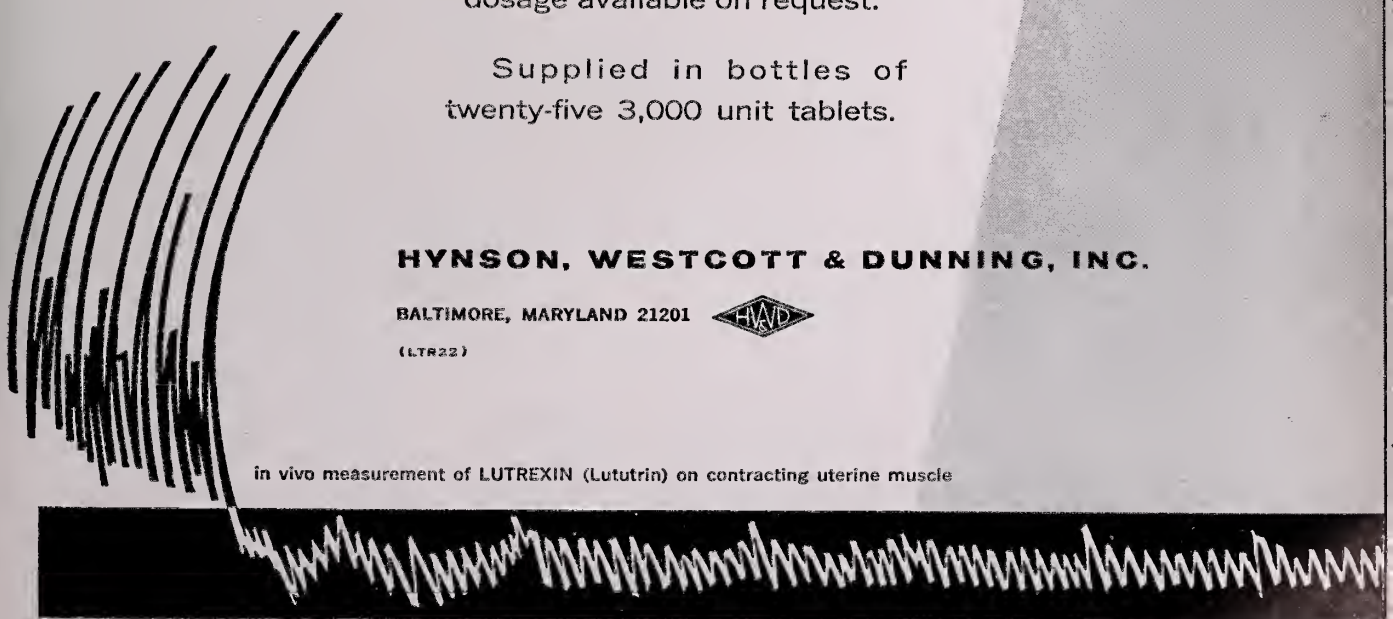

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l for them. It promotes a sense of well-being that activates patients...makes them feel like doing things...and prompts them to get the exercise your weight-control program calls for.

Preludin effectively reduces appetite. Preludin's ability to help patients shed weight has been described in more than 300 published clinical reports involving more than 10,000 patients. It will work in your weight-control programs too.

udin® tablets of 25 mg.
rets® prolonged-action tablets of 75 mg.
ge: One 25 mg. tablet two or three times daily,
e 75 mg. Endurets tablet once daily.
raindications: Severe coronary artery disease,
rthyroidism, severe hypertension, nervous
bility, and agitated prepsychotic states. Do not
vith other CNS stimulants, including MAO
itors.
ing: Do not use during the first trimester of
ancy unless potential benefits outweigh
ble risks.
utions: Use with caution in moderate hyper-
on and cardiac decompensation. Cases involving
e of or dependence on phenmetrazine hydrochloride have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations, or delusions. Do not exceed recommended dosage.
Side Effects: Dryness or unpleasant taste in the mouth, urticaria, and (rarely) overstimulation, insomnia, dizziness, nausea, urinary frequency or nocturia, or headache.
For complete details, please see full Prescribing Information. (B)46-560A

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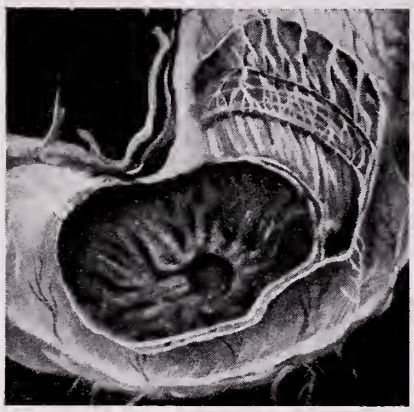
Geigy Pharmaceuticals, Division of
Geigy Chemical Corporation, Ardsley, New York

In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart

Don't let monilia cut broad-spectrum therapy short...

start with Tetrex-F®

tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

Against these three major pathogens...

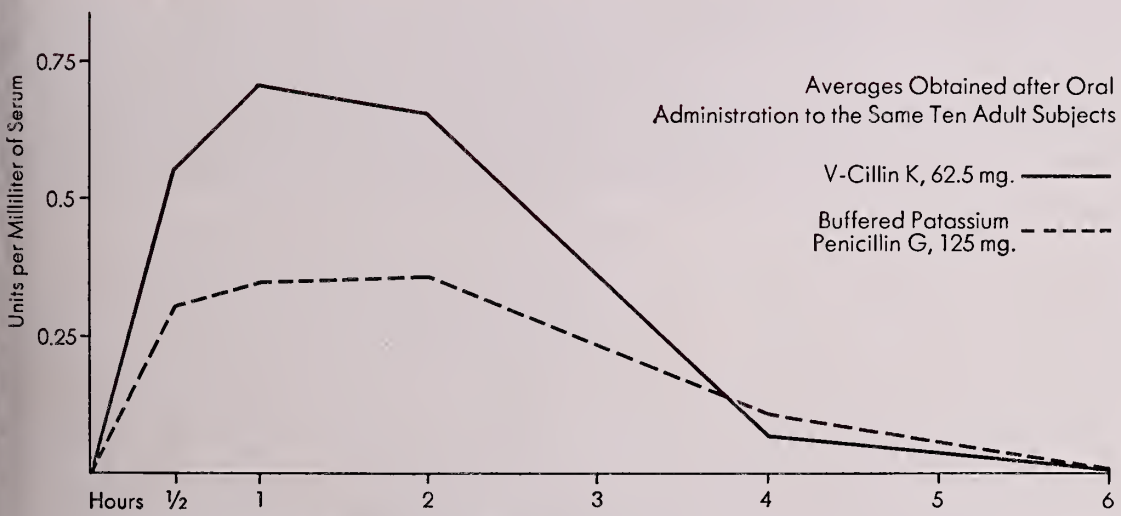
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplacaccus Pneumaniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med.,269:1019, 1963.

with high blood levels, even in the presence of food



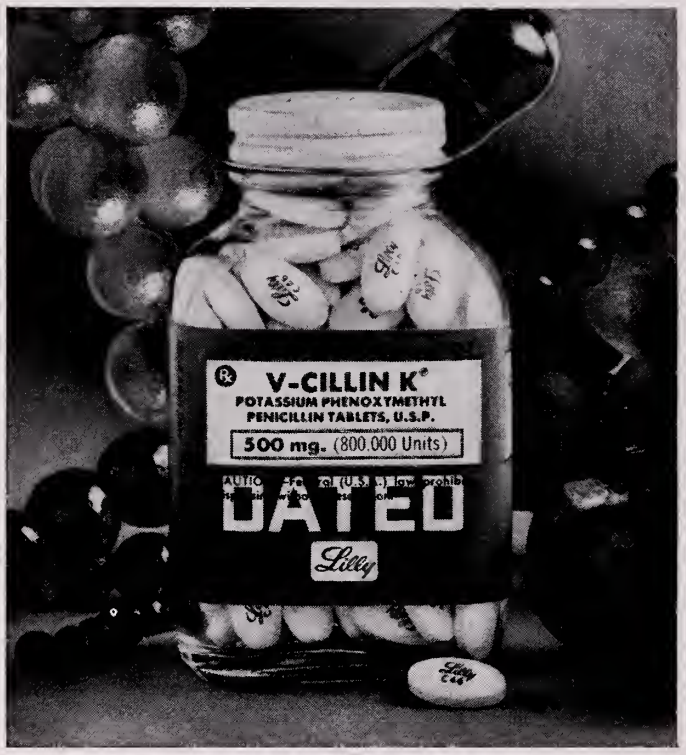
Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

V-Cillin K® Lilly 700636

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patien with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with hig parenteral dosage schedules, frequent evaluation of the renal an hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studie (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth o pencillin-insensitive organisms. In such cases, its administration shoul be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much les common with administration of oral penicillin than with intramuscul forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a signi cant index of sensitization. The following hypersensitivity reactio associated with the use of penicillin have been reported: skin rashe ranging from maculopapular eruptions to exfoliative dermatitis; urt caria; and reactions resembling serum sickness, including chills, feve edema, arthralgia, and prostration. Severe and often fatal anaphylaxi has occurred (see Warnings). Hemolytic anemia, leukopenia, throm bocytopenia, and nephropathy are rarely observed side-effects an are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K Pediatric, the usual dosage ranges from 125 mg. (200,000 units) thre times a day to 500 mg. (800,000 units) every four hours. For infant the daily dosage may be 50 mg. per Kg. of body weight divided int three doses.

Beta-hemolytic streptococcus infections without associated ba teremia may be treated with 200,000 to 400,0000 units three times day. Therapy should be continued for a minimum of ten days to preve development of rheumatic fever and/or other serious complication Dosage for routine streptococcus prophylaxis in patients with a histo of rheumatic fever or congenital heart disease may be 200,000 uni once or twice daily. When such patients undergo tonsillectomy, too extraction, or other minor surgery, the prophylactic dose should b 500,000 units every six hours given two days prior to surgery and f two days postoperatively. If oral medication is not feasible on the da of surgery, parenteral therapy should be considered. Mild to mode ately severe pneumococcus pneumonia has been treated effective with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be give every six to eight hours in conjunction with indicated surgical proc dures.

For gonorrhea in males, 500 mg. (800,000 units) every four hou for three doses may be employed; in females, 500 mg. every four hou for six doses are recommended. Patients with a suspected lesion syphilis should have a dark-field examination before receiving penicill and monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 m (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,0000 units) p 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [011867]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

700

She simply sits while the party goes on around her, already used to being the girl who is left out. She tries to lose weight—but her emotions won't let her. She becomes irritable and depressed when she doesn't eat, and anxious when she considers her future. So each time she gives up.

"What can I do?" she asks when she visits your office. "How can I ever stay on a diet and lose weight?"

A PARTICULAR COMBINATION OF ACTIONS

Ambar #2 Extentabs®

methamphetamine hydrochloride 15 mg., phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

FOR THE NEEDS OF THE DIETING WOMAN

A. H. Robins Co., Inc.
Richmond, Va. 23220
A·H·ROBINS

Ambar is formulated to specifically meet both the physical and emotional needs of the woman who is trying to lose weight. *Methamphetamine hydrochloride* has a powerful suppressant effect on the appetite and also provides a gentle psychic lift to improve mood and encourage activity. The *phenobarbital* component, through its classic calming action, helps control irritability and anxiety, and helps counteract excessive CNS stimulation.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY / *Indications:* Ambar suppresses appetite and helps offset emotional reactions to dieting. *Side Effects:* Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. *Precautions:* Administer with caution in the presence of cardiovascular disease or hypertension. *Contraindications:* Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. See package insert for further details.

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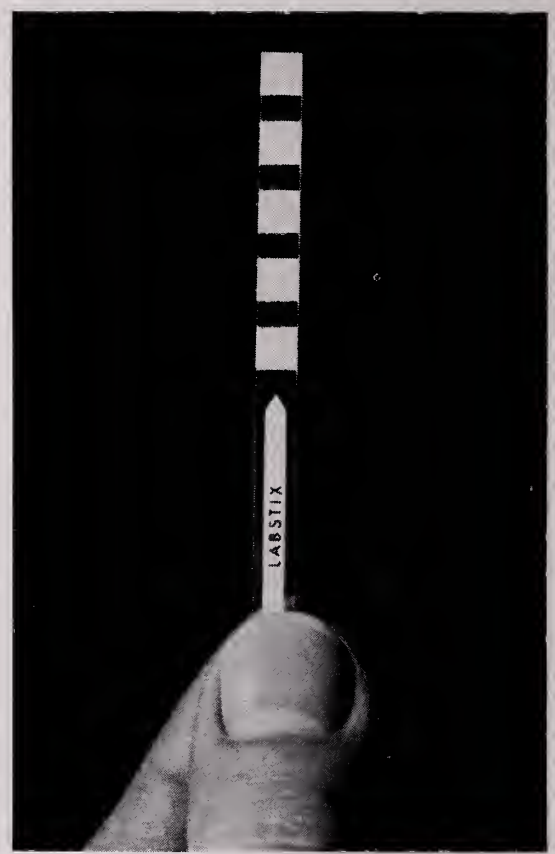

Take five...

LABSTIX® provides 5 important urinary findings*—on a single reagent strip! That's *more* information than you can get from any other single reagent strip. You know the results in just 30 seconds--while the patient is still in your office—and readings are reliable and reproducible. LABSTIX is easy to handle, too. Never goes limp, even when wet, because it's made with clear, firm plastic. And results with LABSTIX are easy to read—color contrast between the test areas and the transparent plastic is clearly defined. An unexpected "positive" from testing with LABSTIX may help in detecting hidden pathology before marked symptoms are manifest.

*Blood; ketones; glucose; protein, and pH.

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Elkhart, Indiana 46514

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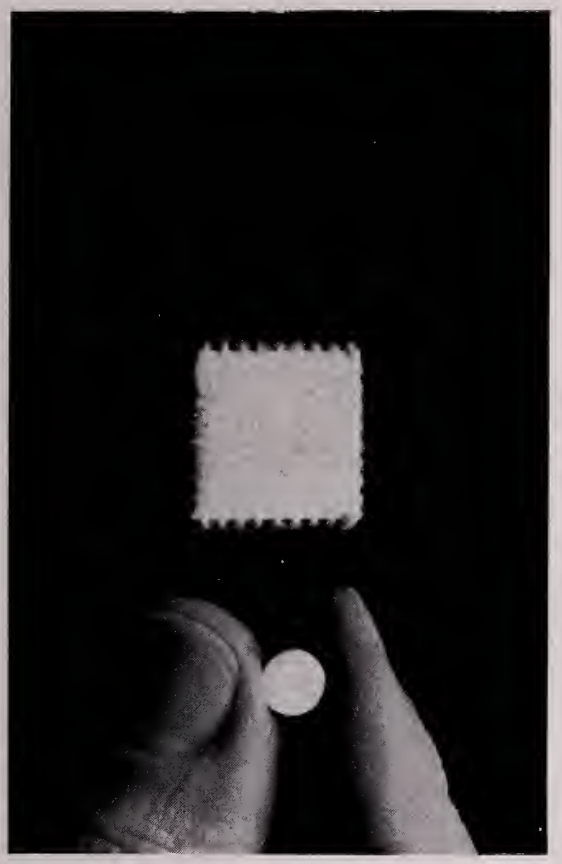

...Plus one

You can extend your testing scope by including ICTOTEST® Reagent Tablets, the 30-second determination for bilirubinuria—which can be an early sign of obstruction of the common bile duct, infectious hepatitis, or other liver disease. This test is also useful for detecting liver damage from carbon tetrachloride and other halogenated hydrocarbons used as industrial and household solvents. Positive findings with the urine-testing team of LABSTIX and ICTOTEST can represent significant guides to patient management in many clinical situations. "Negatives" may help rule out suspected abnormalities over a broad clinical range and are important for the patient's record.

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MEDICAL SCHOOL NOTES

University of Colorado Medical Center

Dr. George J. Hill II of the University of Colorado School of Medicine is one of 11 outstanding young members of American medical school faculties who will share $250,000 in awards for their dedication to medical education. The awards are made by Lederle Laboratories, pharmaceutical manufacturers, to sustain the high caliber of medical education in the United States and Canada by helping young teachers of exceptional promise in the 30 to 40-year bracket to remain in academic medicine.

The award to Dr. Hill will be paid in three annual installments to support and encourage his teaching and research activities. His special professional interests include cancer surgery and research, immunology, tissue transplantation, renal physiology, and radioisotopes.

* * * *

Mrs. Jean Miller Sayre of Boulder has been elected president of the newly organized University of Colorado School of Nursing Alumni Assn. The association reactivates an early alumni group in the CU nursing school which has not functioned for many years.

Mrs. Sayre was elected at the recent first meeting of the new association's board of directors. Other officers elected were: Miss Shirley Booth, assistant professor of maternal-child nursing in the CU nursing school, vice president; Mrs. Alice Selch Stephenson, Denver, secretary; and Mrs. Helen Brady O'Donnell, of Colorado Springs, historian.

Miss Maxine R. Berlinger, associate professor of nursing and chairman of a faculty committee for reactivation of the nursing alumni group, said the establishment of the new association has met with enthusiastic response. The CU nursing school has more than 2,000 graduates scattered throughout the nation and world who will be eligible for membership.

* * * *

Dr. Marjory Gillmor Hibbard, professor in the University of Colorado School of Nursing and director of its graduate school programs, will retire June 30 after more than 26 years of service to nursing education.

She joined the CU faculty in July, 1951, as an acting assistant professor and was promoted to professor the following December, at which time she was placed in charge of the advanced degree programs of the School of Nursing. She has directed the graduate school programs in nursing since.

* * * *

Capt. Gerald J. Duffner of the U. S. Navy Medical Corps, a 1941 graduate of the University of Colorado School of Medicine, has been awarded the Legion of Merit for his contributions to military medicine. The award was presented at ceremonies aboard the Navy hospital ship, U. S. S. Sanctuary, of which Captain Duffner is commanding officer. Presenting the award was Capt. Alfred F. Betzel, commander of Service Squadron Seven of the Pacific Fleet. Captain Duffner received the award for his service as surgeon of the Atlantic Fleet from May 7, 1963, to Oct. 28, 1966.

The Legion of Merit is the second recent honor Captain Duffner has received from the Navy. Last year he was awarded the Joint Service Commendation Medal for outstanding service as command surgeon on the staff of the Atlantic Command from April 25, 1964, to Aug. 31, 1965, during the Dominican Republic crisis. He was cited at that time for "exceptional initiative, judgment and foresight in making available prepositioned medical supplies to meet the disaster medical relief needs of indigenous citizens and numerous non-combatant evacuees of many nationalities."

* * * *

Dr. Alfred H. Washburn, research professor of pediatrics in the University of Colorado School of Medicine and longtime director of the Child Research Council at the CU Medical Center, has recently retired after nearly 37 years of service on the medical faculty of the University.

A pioneer in the scientific study of the growth and development of children, Dr. Washburn has earned a distinguished national and international reputation for his work and has received numerous honors and awards, including two honorary degrees.

During his 30 years as head of the council, he directed what is believed to be a unique long-term study of human growth and development. Under his leadership, the council has compiled a mass of detailed data on more than 200 persons from their birth or before in a longitudinal investigation of human growth without precedent in American medicine. Some of the volunteer subjects of the study are second-generation participants in the effort to learn more about how human beings develop physically, physiologically and psychologically.

In 1930, Dr. Washburn was appointed to the CU medical faculty as associate professor of pediatrics and became director of the privately financed Child Research Council. He became research professor of pediatrics in 1939, professor of pediatrics and head of the Department for the Study of Human Growth in 1946, and was awarded the title of professor emeritus in 1960 when he stepped down as director of the council. He has been engaged in research and part-time teaching since 1960.

* * * *

The U. S. Senate has confirmed President Johnson's nomination of Dr. Kathryn M. Smith, dean of the University of Colorado School of Nursing, as the first woman member of the Board of Regents of the National Library of Medicine in Bethesda, Md. Dean Smith is one of two new Presidential appointees to four-year terms as regents of the library.

The Board of Regents of the NLM consists of 10 appointees and six ex-officio members. It serves as an advisory board to the Surgeon General of the U. S. Public Health Service in establishing policies for the library and its services and on the award of grants under the Medical Library Assistance Act of 1965.

Dr. Smith became dean of the CU nursing school on July 1, 1965, after serving on the nursing faculties of the University of California and the University of Minnesota. She holds a B.S. degree from Minnesota U. and M.S. and D.Ed. degrees from Stanford University. As a practicing nurse, before entering on her career as a nursing educator, Dr. Smith was head pediatric nurse at Colorado General Hospital in 1941 and 1942.

The author of numerous contributions to professional nursing journals, Dean Smith is a member of the American Nurses Assn. and the National League for Nursing. From 1956 to 1960 she was a member of the Western Council of Higher Education and from 1956 to 1958 was a director of the Family and Children's Agency of San Francisco. She was assistant dean of the University of California School of Nursing in San Francisco from 1947 to 1964.

University of Utah College of Medicine

David A. Dolowitz, M.D., of the Department of Otolaryngology, University of Utah Medical Center, reported a new, and as yet unidentified, material in the blood cells of cystic fibrosis patients. Addressing the February 25 meeting of the regional convention of the National Cystic Fibrosis Foundation, Dr. Dolowitz said his research had uncovered a blue-colored material "which had never been seen before." He said his research task is to now link the material to cystic fibrosis. He said his research has also isolated a granular material and an unidentified type of mucus.

* * * *

University of Utah assistant professor of surgery, Dr. Lawrence E. Stevens, noted recently that the Utah Medical Center is concentrating on means of suppressing rejection reaction during a kidney transplant without laying the patient open to infection. The margin between this suppression, on the one hand, and infection, on the other, is very narrow and requires close surveillance by the attending physician. University of Utah surgeons have implanted 17 kidneys thus far. Dr. Stevens reported that rejection reactions have occurred in all but one patient, and have been forestalled in half of these.

* * * *

Dr. Richard K. Hughes, an outstanding young cardiovascular surgeon, recently was appointed by the University of Utah Board of Regents as an associate professor in the U. of U. Department of Surgery.

Dr. Hughes currently is chief of thoracic and cardiovascular surgery at the Los Angeles Veterans Administration Center, affiliated with the School of Medicine at the University of California at Los Angeles.

He received his A.B. from Stanford in 1951 and his M.D. from the Stanford School of Medicine in 1955. He completed his internship at George Washington University Hospital, Washington, D. C. in 1955 and his residency at the same hospital in 1960.

Dr. Hughes has taught at both George Washington and UCLA. He is a member of the American Board of Surgery, the Board of Thoracic Surgery, American College of Surgeons, American Thoracic Society, American Medical Association and others.

* * * *

Dr. Willem J. Kolff, a pioneer in the development and research work on artificial kidneys and internationally known surgeon, recently was appointed Professor of Surgery, University of Utah College of Medicine, by the U. of U. Board of Regents.

Dr. Kolff initiated his research on the artificial kidney in 1938 during the occupation of Holland. At the time he was head of the Medical Department at the Municipal Hospital of Kampen. During the early '40's he developed the first practical artificial kidney and demonstrated its clinical usefulness.

Dr. Kolff was born in The Netherlands. He received his early education in that country and his M.D. from the University of Leyden Medical School. Later he received a Ph.D., summa cum laude, from the University of Groningen, also in The Netherlands.

He has received many honors, awards and prizes and is the author of more than 260 articles which have been published in scientific journals throughout the world.

Announcement

Jane Nugent Cochems Competition

The University of Colorado School of Medicine announces the Sixth Annual Cochems Competition, funds for which were provided in the will of the late Mrs. Jane Nugent Cochems. A prize of $2500 will be awarded to the author of the best paper in the field of "Thrombophlebitis and Basic Vascular Problems." Basic vascular problems under consideration in this instance should be concerned with the underlying mechanisms or processes of vascular disease, particularly those associated with thrombosis, but not necessarily restricted to it.

The competition is open to all persons holding the doctorate degree and entries must be received in triplicate, including all charts, illustrations and photographs, on or before **November 15, 1967.** For income tax reasons, eligibility is limited to those physicians who are subject to U. S. income tax regulations.

No entry blank or application form is required. There are no restrictive rules regarding length or format of the manuscript, joint authorship, or inclusion of such materials as pictures, charts, figures, etc. It is not required that the paper include results of original experimental work, nor that it be based on personal clinical experience. All manuscripts must be typed with double spacing and each copy together with accompanying illustrations, etc., must be submitted in a folder or cover. On request, the original copy of the manuscript will be returned if accompanied by a stamped, addressed enveloped. Papers will be judged on originality, content, clarity, and critical value.

Inquiries regarding the competition and all manuscripts should be submitted to Dr. John J. Conger, Vice President for Medical Affairs and Dean, School of Medicine, University of Colorado Medical Center, 4200 E. Ninth Avenue, Denver, Colorado 80220.

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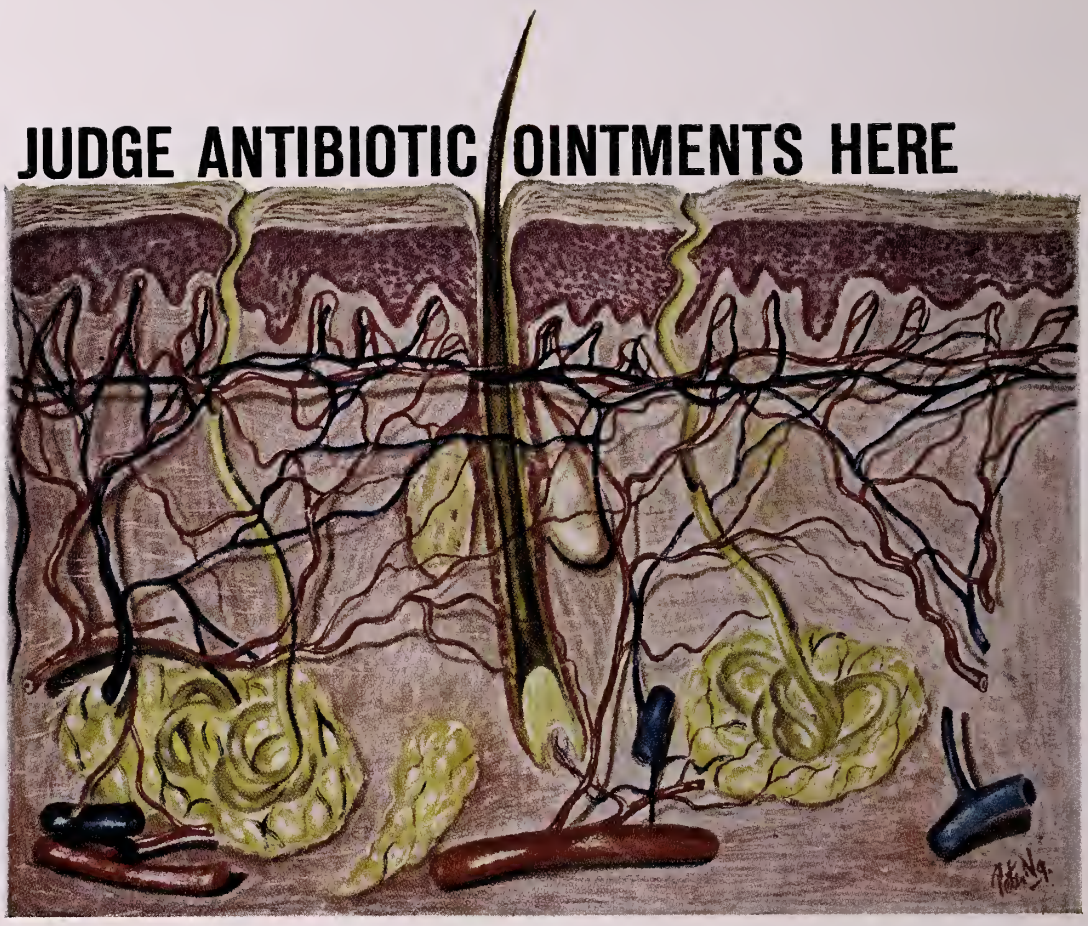

Results on skin are final proof of any topical antibiotic's effectiveness

No in vitro test can duplicate a clinical situation on living skin. 'Neosporin' (polymyxin B—bacitracin—neomycin) Ointment has consistently proven its effectiveness in thousands of cases of bacterial skin infection. The spectra of the three antibiotics overlap in such a way as to provide bactericidal action against most pathogenic bacteria likely to be found topically. Diffusion of the antibiotics from the special petrolatum base is rapid since they are insoluble in the petrolatum, but readily soluble in tissue fluids. The Ointment is bland and nonirritating.

Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.

Complete literature available on request from Professional Services Dept. PML.

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POLYMYXIN B-BACITRACIN-NEOMYCIN OINTMENT

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

Picture of bursitis

treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

Parafon Forte helps to relieve pain, restore mobility . . . stop pain-spasm feedback

Here is why. PARAFON FORTE provides:

a nonsalicylate analgesic equal to aspirin for the relief of pain,[1,2] yet unlikely to produce the irritation to the gastric mucosa so often associated with salicylate therapy[3]

and a skeletal muscle relaxant shown to have up to a 6-hour span of action,[4-6] and to retain effectiveness even on continued administration,[5-7] but which does not have the central effects of tranquilizing compounds.

Prescribe PARAFON FORTE for lasting spasmolysis and analgesia in sprains, strains, myalgias, low back pain, bursitis and other musculoskeletal disorders. Your patients will appreciate the restored comfort and lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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in alcoholism:

B and C vitamins aid therapy. Therapeutic amounts of B and C vitamins can be important in the management of the alcoholic patient. In alcoholism, as in many chronic illnesses, STRESSCAPS vitamins aid therapy.

Stresscaps®

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Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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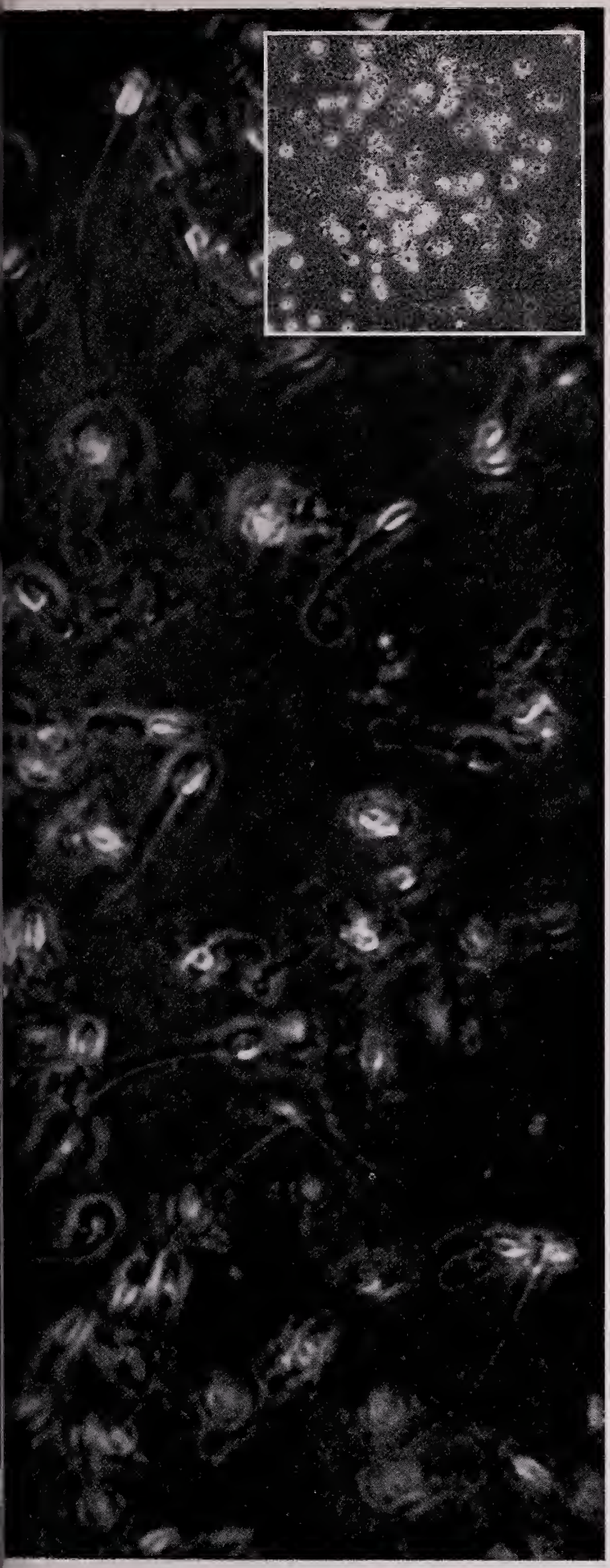


New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1—which provide the combined action of both low-dosage progestogen and estrogen for the full treatment cycle—offer multiple contraceptive action that helps explain their unexcelled record of effectiveness. This report explores the secondary protective mechanisms against unwanted pregnancy offered by combined hormonal administration and the importance of the progestational agent in making such multiple contraceptive action possible.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has an adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) reverses the usual mid-cycle picture of a thin, watery cervical mucus. The result—a built-in barrier that inhibits sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

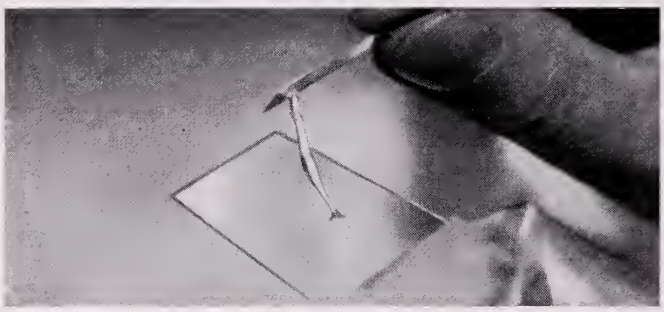
How the estrogen-opposing action of Norinyl-1 creates a hostile cervical mucus

Normally estrogen activity during the fertile midcycle stimulates the production of cervical mucus. The mucus at this time is profuse and watery—allowing maximum sperm motility and promoting penetration.
But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that diminishes the vitality of the sperm and impairs its powers of penetration.

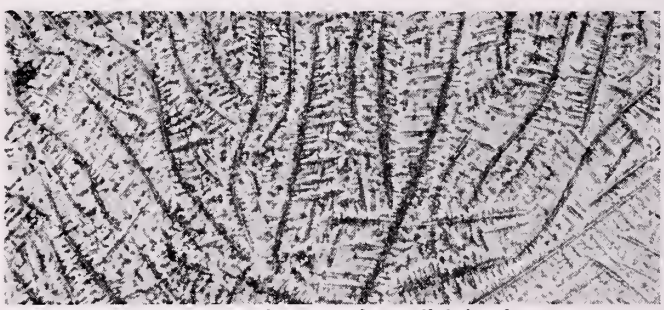
How hostile cervical mucus supports contraceptive action

The importance of these observations to the effectiveness of Norinyl-1 has been noted in a report on 89 patients taking this medication.* In all instances, cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit. In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception. *Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

Normal cervical mucus at midcycle in untreated patient permits sperm motility... promotes sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.

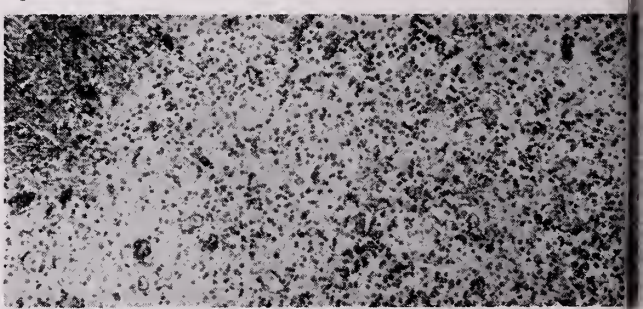


Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

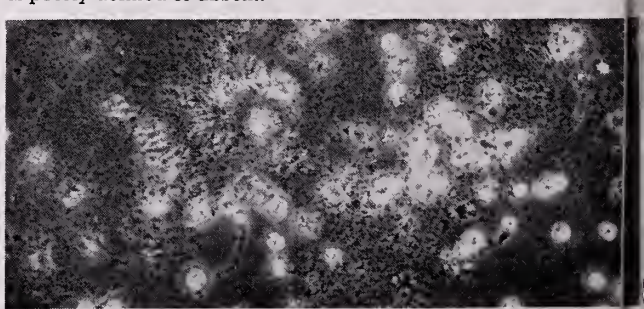
Spermatozoa appear healthy, are active and freemoving.

Hostile cervical mucus at midcycle produced by Norinyl-1 impairs sperm vitality... inhibits penetration.

Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, hostile cervical mucus the fern pattern is poorly defined or absent.

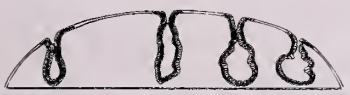


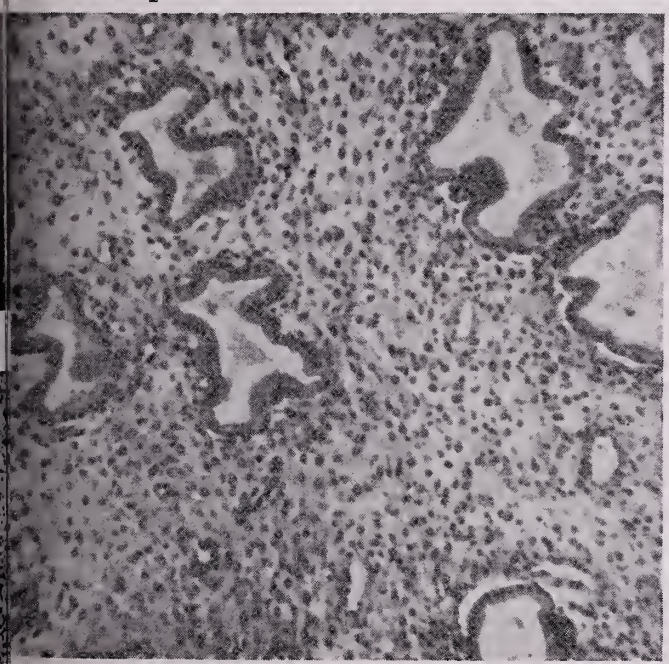
Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

An endometrium unreceptive to nidation– another supporting contraceptive action of Norinyl-1

Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier? Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy—progestogen intake makes endometrial tissue unreceptive to implantation.

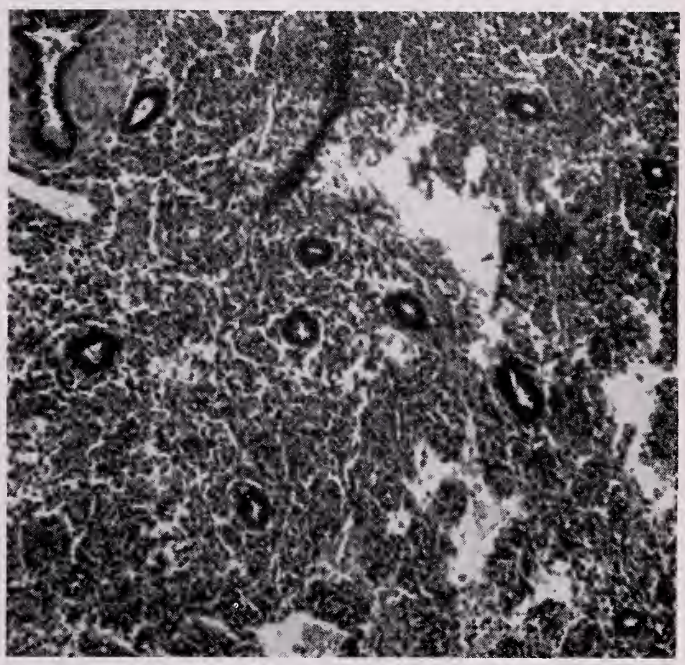
Endometrium of untreated patient





Normally the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Unreceptive endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase, suppressing glandular development. From day 11 on, secretory action is no longer present. The result is that during the latter half of the cycle the endometrium becomes unreceptive to egg implantation.

See last page for contraindications, precautions, side effects and dosage.

new Norinyl®-1 tablets

(norethindrone 1mg + mestranol 0.05mg)

for multiple contraceptive action

effective fertility control on half the previous dosage

maintains ratio of the established norethindrone/mestranol combination

lower cost

new Norinyl-1®

(norethindrone 1mg. c mestranol 0.05mg.) tablets

Reduction of oral contraceptive dosage to lowest effective levels ha become a well-accepted principle of conservative medical practic In keeping with this view, Norinyl is now available in a new strengt in which *both* norethindrone and mestranol are reduced 50 percer Studies show that Norinyl-1 achieves fertility control with only 1.0 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent i human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., c an oral contraceptive, is currently in use by over 2,000,000 wome Clinical experience now establishes that Norinyl-1 also amply mee the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: creased bromsulphalein retention and oth hepatic function tests, coagulation tests crease in prothrombin, factors VII, VIII, IX a X), thyroid function (increase in PBI and bu nol extractable protein-bound iodine and crease in T^3 values), metapyrone test, pregna diol determination.

Other side effects reported to have occurr in association with use of this drug are di ness, hirsutism, pains in legs, back, chest o abdomen, dysuria, drowsiness, vaginal charge, libido increased and decreased, er tions, hypermenorrhea, hypomenorrh increased appetite, G.U. infections, varic veins, abdominal fullness, acne, headac nervousness, allergies, blurred vision, pain eyes, and itching in eyes. *For complete clini data, see package insert.*

Dosage and Administration: 1. One tablet Norinyl-1 is administered orally for 20 d beginning on day 5 of the menstrual cy (Count day 1 the cycle as the first day menstrual bleeding.) Repeat this dosage sch ule for each cycle. 2. If no menstrual per occurs after a cycle of treatment (20 tablets which patient adhered to the schedule, the tient must be instructed to resume taking Norinyl-1 tablets 7 days after the previous day course was completed. For example, if last pill of a previous cycle had been taken a Sunday, then a new cycle of treatment sho begin on the following Sunday. 3. In the p partum woman, it is recommended that first cycle of treatment should begin on do of the first menstrual cycle. However, Norin should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 with mestranol 0.05 mg.)—Dispensers of 20 60 and bottles of 250 tablets.

norethindrone — an original steroid from

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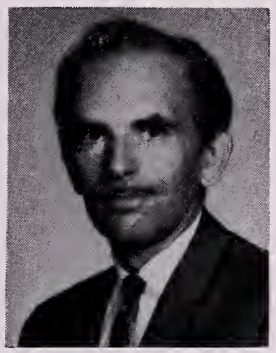

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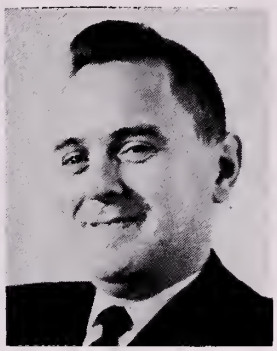

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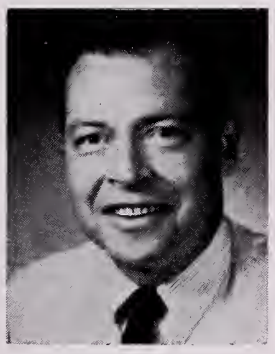

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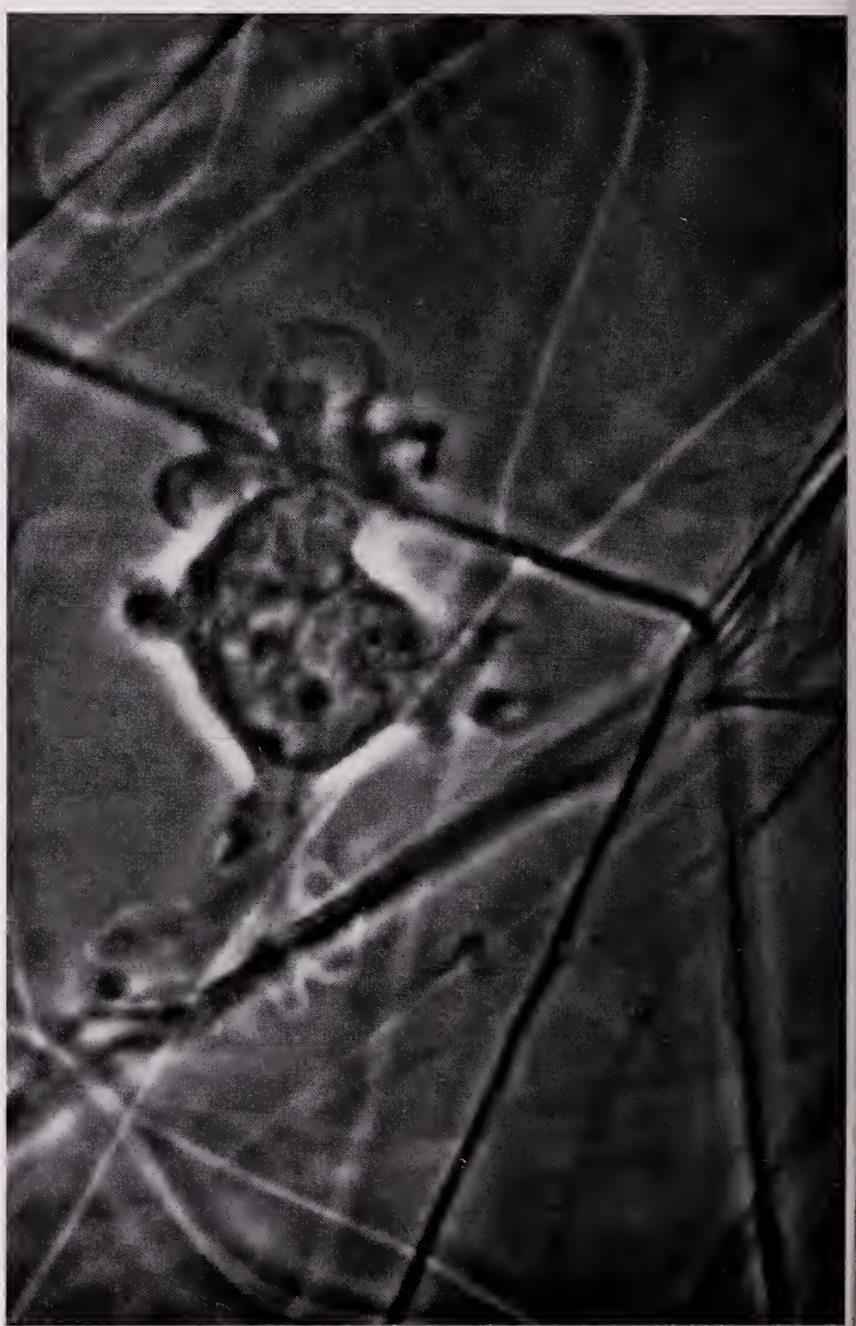
INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

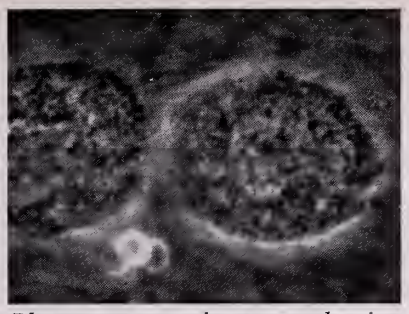


Visual evidence of how corticosteroids influence the inflammatory reaction

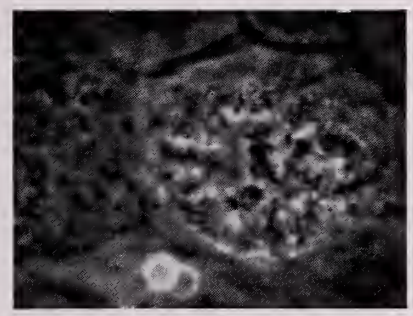
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



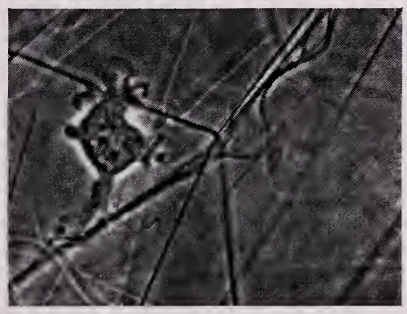
Phase-contrast microscopy showing mast cell before injury.



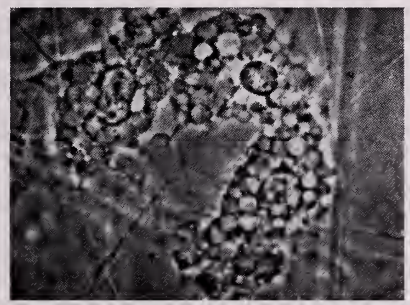
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

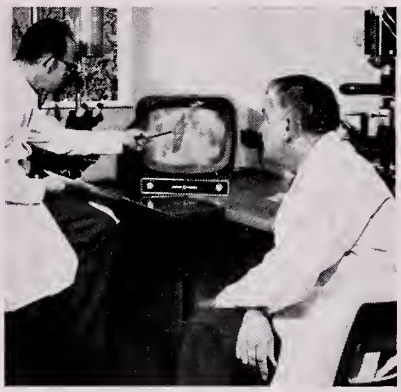
Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



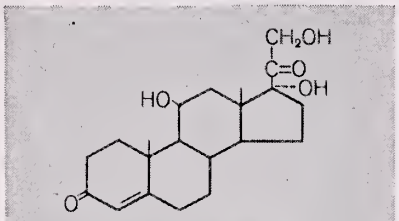
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

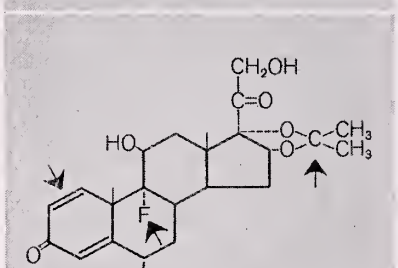
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

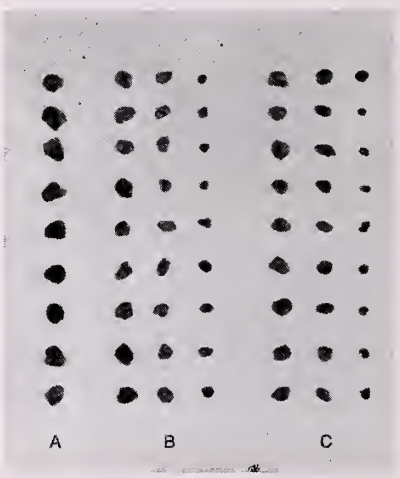


Fluocinolone Acetonide (Synalar)

- ☐ *a double bond between carbons 1 and 2*
- ☐ *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- ☐ *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.

THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

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fluocinolone acetonide—an original steroid from

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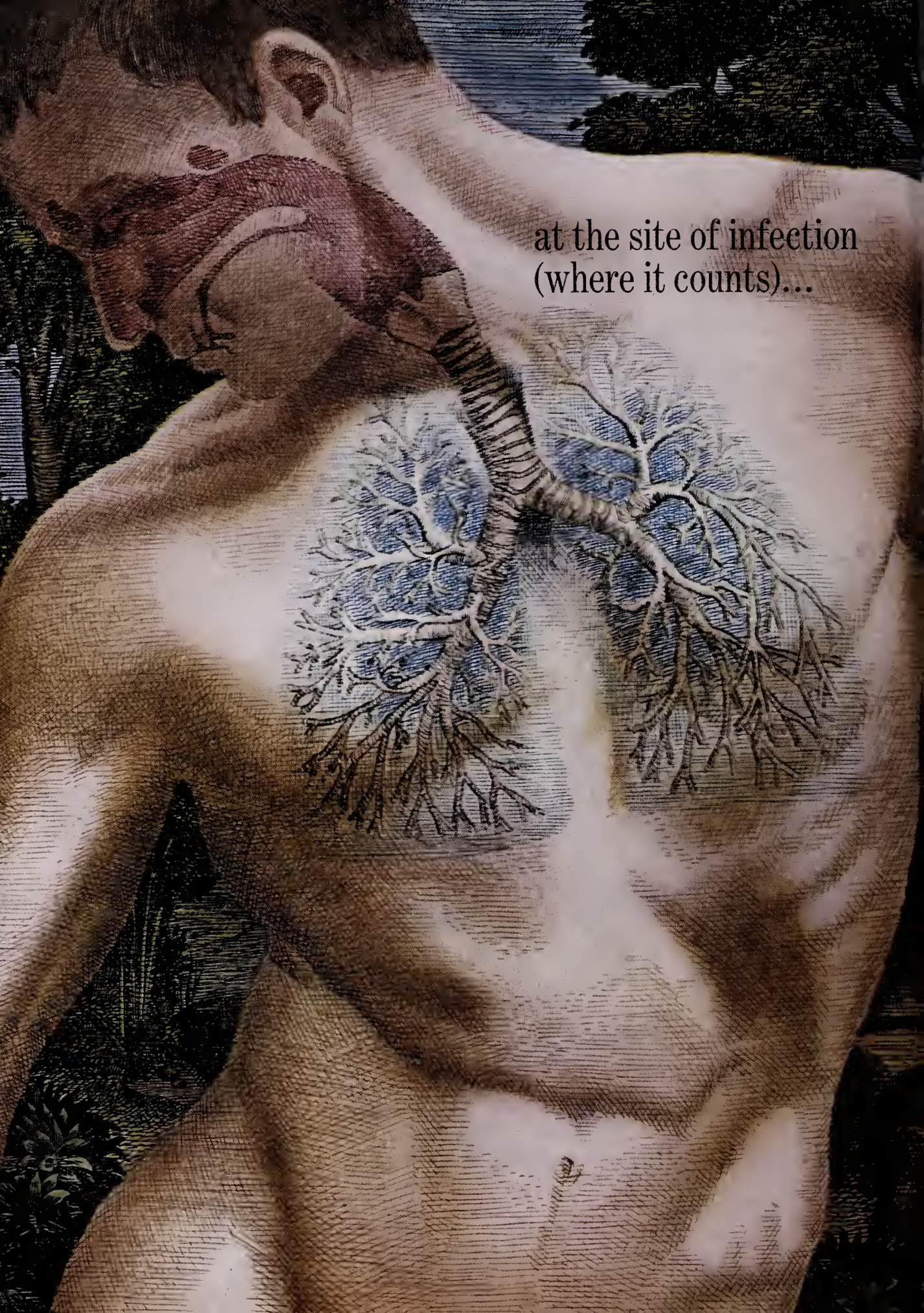
at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

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Lilly

Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings w characterized by increased direct-reacting bilirubin, eleva alkaline phosphatase levels, negative or weakly positive cepha flocculation and thymol turbidity tests, elevated serum glutar oxalacetic transaminase levels, peripheral eosinophilia, and n mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has been reported in other patients taking prolonged courses of medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of th patients' families, who were not taking the drug, had episo of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels w determined in a group of fifty-four adults and children who t 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared w those of a similar group of forty-four patients who received p icillin. There were no cases of jaundice in either group. Elevat of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilos and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penici group showed elevations in one of the tests at some time dur administration of the drugs.

Very satisfactory therapeutic results, without toxicity, w reported in 102 pediatric patients who received short-term (t day) courses of Ilosone in the treatment of streptococcus in tions. Results of liver function tests in these patients were c parable to those in a similar control group who had recei penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a re of a local stimulating effect of the medication on the aliment tract; however, the normal intestinal gram-negative bacte flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urtica skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®
Ilosone Chewable Tablets
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Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds of b weight, the usual dosage is 5 mg. per pound every six hours; children twenty-five to fifty pounds, 125 mg. every six ho (Tablets Ilosone Chewable should be chewed or crushed swallowed with water.)

For adults and for children over fifty pounds, the usual dos of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythrom therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fif days. Close follow-up of the patient is necessary since eryt mycin drugs have not had adequate evaluation in all stage syphilis. Examinations of spinal fluid are recommended as of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wi suspected lesion of syphilis should have a dark-field examina before receiving antibiotics, and monthly serologic tests sh be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to ba in bottles of 50.

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Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equiva to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packa

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 19

Additional information available to physicians upon request.
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La

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DORSEY Season

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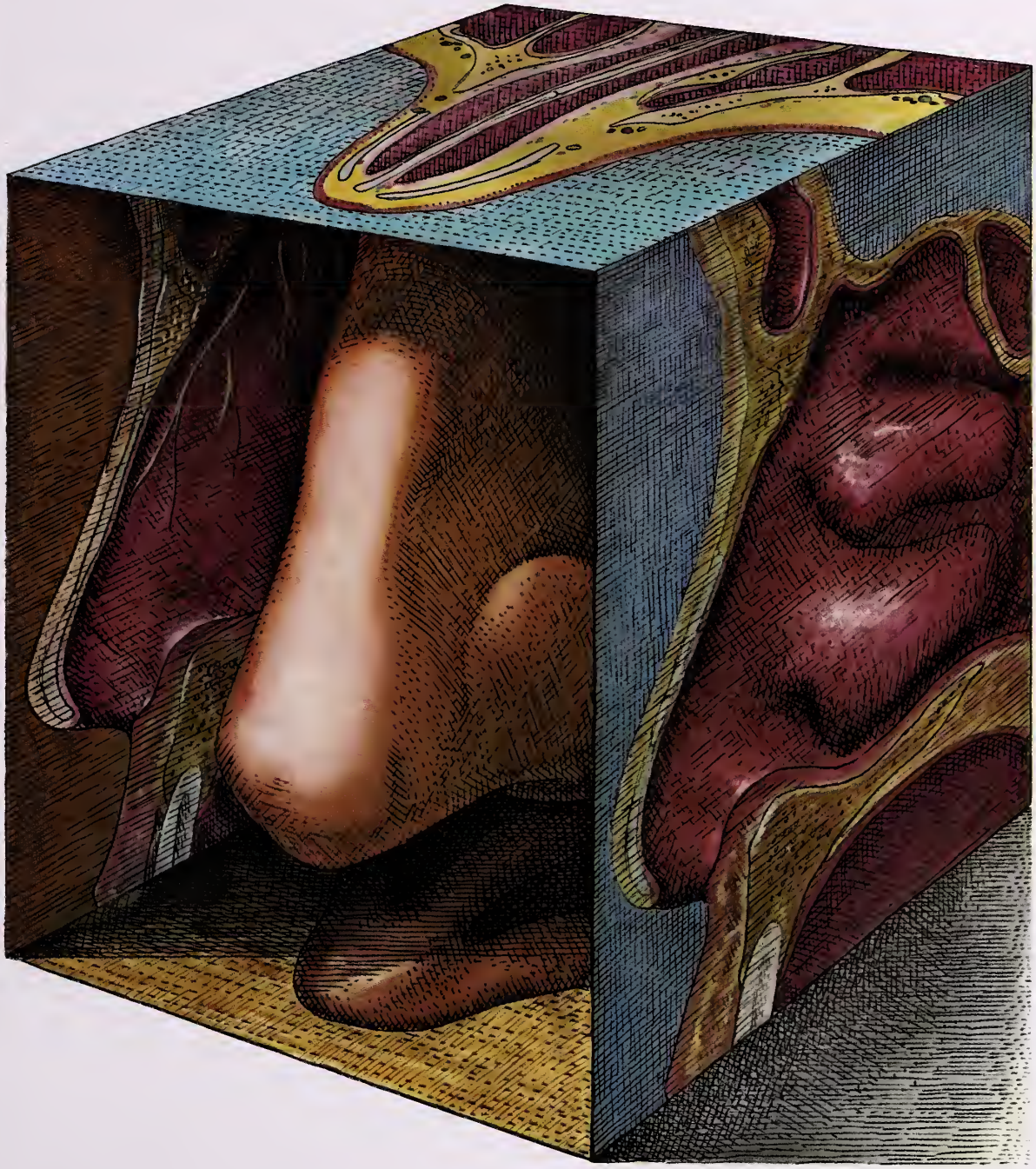


this issue: the ubiquitous world of summer allergies

the ubiquitous world of summer allergies

Donald L. Unger, M.D. • Clinical Assistant Professor, Department of Medicine (Allergy), Stritch School of Medicine (Loyola).

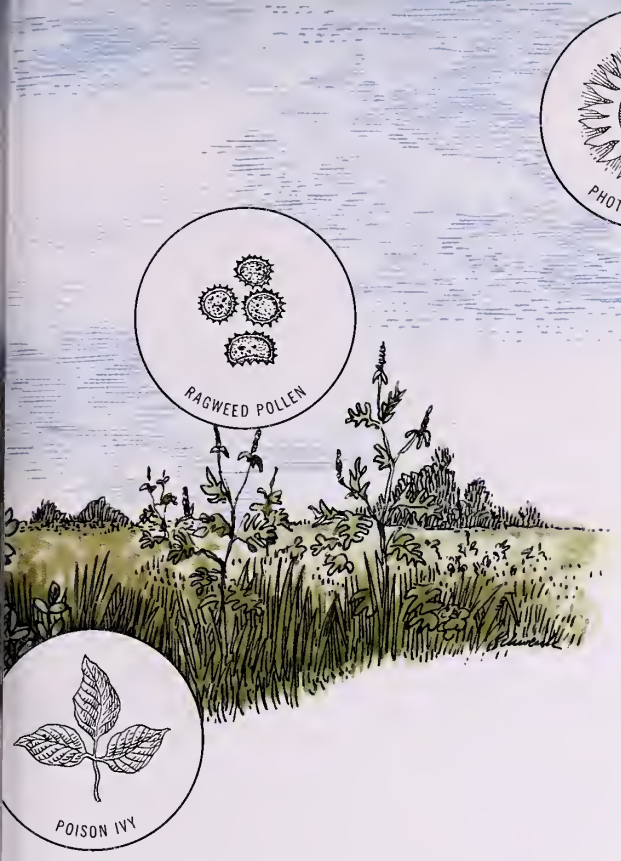
In the Spring a young man's fancy lightly turns to thoughts of—allergies. This is at least true of the 10% of the population who have hay fever and the 4% who have asthma.[1] The snow melts, the trees blossom and the noses run. Patients who were fine all winter may not be enthralled by the sight of the first robin or the blossoming of a crocus, for their appearances may precede the "sneezin' season."

Allergies in general can be divided into winter allergies and summer allergies. In the winter the main problems are inside the house: e.g. dogs, cats, dust and feathers. Houses in the northern half of the country become so dry that it becomes essential to add humidity to the home; this is a far cry from the damp summer months with the moldy basements and need for dehumidifiers.

Early in April trees begin to pollinate, with each tree having about a two week period of pollination. A particular patient may be sensitive to only one tree and thus have his hay fever for such a short time that he thinks he has a cold.[2] The entire tree season starts about April 1 and ends about Memorial Day, although all hay fever seasons are blurred and prolonged in the southern part of the country. Tree pollen is usually very heavy and a person may well have most of his exposure from those trees immediately surrounding his home.

Grasses pollinate from about May 15 until July 4, and cause "rose fever." Grass pollens are somewhat lighter and more buoyant than tree pollens, and are much more ubiquitous. While there are several varieties of grasses in the United States, they are so closely related antigenically that a person sensitive to one is generally sensitive to them all.[3] Thus, while the tree season is really several small seasons intertwined, the grass season will usually result in symptoms for a more prolonged period. Obviously, a grass-sensitive patient will have trouble only when grass is pollinating—he will have to think of another excuse not to mow the lawn after July 4.

Ragweed is the "Big Daddy" of them all in the eastern two-thirds of the country. Pollination is generally from mid-August until the end of September, with the predicted lower counts and longer seasons



in the southern part of the country. Ragweed is a very light pollen which may be windborne for hundreds of miles. An interesting study was made in New York City, in which 90% or more of the ragweed plants were destroyed in three of the five boroughs; pollen counts done during the season were virtually identical in all five.[4]

Ragweed is, of course, the most common cause of hay fever and is associated with an incredible loss of man hours from work each year. Many is the patient who travels to areas where the pollen count is low, just to avoid having symptoms. There is no ragweed anywhere in the world except the United States and portions of Canada and Mexico.

While molds are present through the year, the most important ones predominate from April until November. An old wives' tale has ragweed ending with the first frost, when actually it ends a good month earlier. It is Alternaria—the kingpin of the molds—that meets a sudden demise with the first frost. Alternaria-sensitive patients are in their glory when there is snow on the ground, and might be ideally suited to man the radar stations in Alaska. In September and October, Alternaria counts are at their highest, perhaps associated with the burning of leaves. Other molds such as Hormodendrum and Helminthosporium are associated with the warmer weather, as opposed to Penicillium and Aspergillus which are household molds.

Summer also means the return of our much maligned associates—bugs. Insects cause allergic symptoms by two methods: the bite or sting of the Hymenoptera group, and the inhalation of particles of the bodies of various insects. Wasp stings are the oldest known form of allergy, as they caused the death of one of the pharaohs in ancient Egypt.[5] Bees, wasps and hornets account for many deaths in this country, and those sensitive to them should carry special treatment kits at all times; a few minutes delay in the administration of epinephrine to such a patient, might be the difference between life and death. Inhalation of particles of insects may cause sneezing and wheezing in a susceptible individual.[6] Both of these forms of insect allergy may be benefitted by hyposensitization.

The insect recognizes no professional bounds. He is as apt to bite the physician as the patient. So this season, beware of bugs. And beware, too, of poison ivy. That pleasant stroll through the woods and underbrush with the Boy Scouts might turn into a

(Concluded on following page)

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nightmare for the botanically uninitiated in the causes of rhus dermatitis (poison ivy, poison oak and poison sumac). Although you may have been careful, your dog may not have noted that it wasn't clover he jumped through, but poison ivy. His return to your side may give you the rhus dermatitis that you so carefully avoided. That heavenly campfire may be emitting particles of rhus oil to produce an airborne contact dermatitis of the exposed areas of the body.

Another fascinating, but rather infrequent type of summer allergy is physical allergy. Some people sneeze on exposure to sunlight, while others break out in rashes, usually on the exposed parts of the body. These rashes may well follow the administration of various photosensitizing drugs, e.g. demethylchlortetracycline.[7] Another form of physical allergy and one that may be lethal in the summer, is cold allergy. Yes, I mean cold allergy, not heat allergy. The cool dip on a hot day with its consequent sudden chilling of the body, may be the coup de grace for a cold sensitive patient.[8] It is customary to write "heart attack" on the death certificate, even though the victim may have been an 18-year-old boy who looks like a Greek god.

Lest the reader be depressed by this saga of afflictions associated with the warmer months, perhaps he should remember that it is also a time for swimming, baseball, lying in the sun and taking that long-planned vacation. So let's all join in a chorus of "In the Good Old Summertime," as we sneeze, wheeze and scratch. Be careful of your suntan lotion, however; it may cause you a contact dermatitis.

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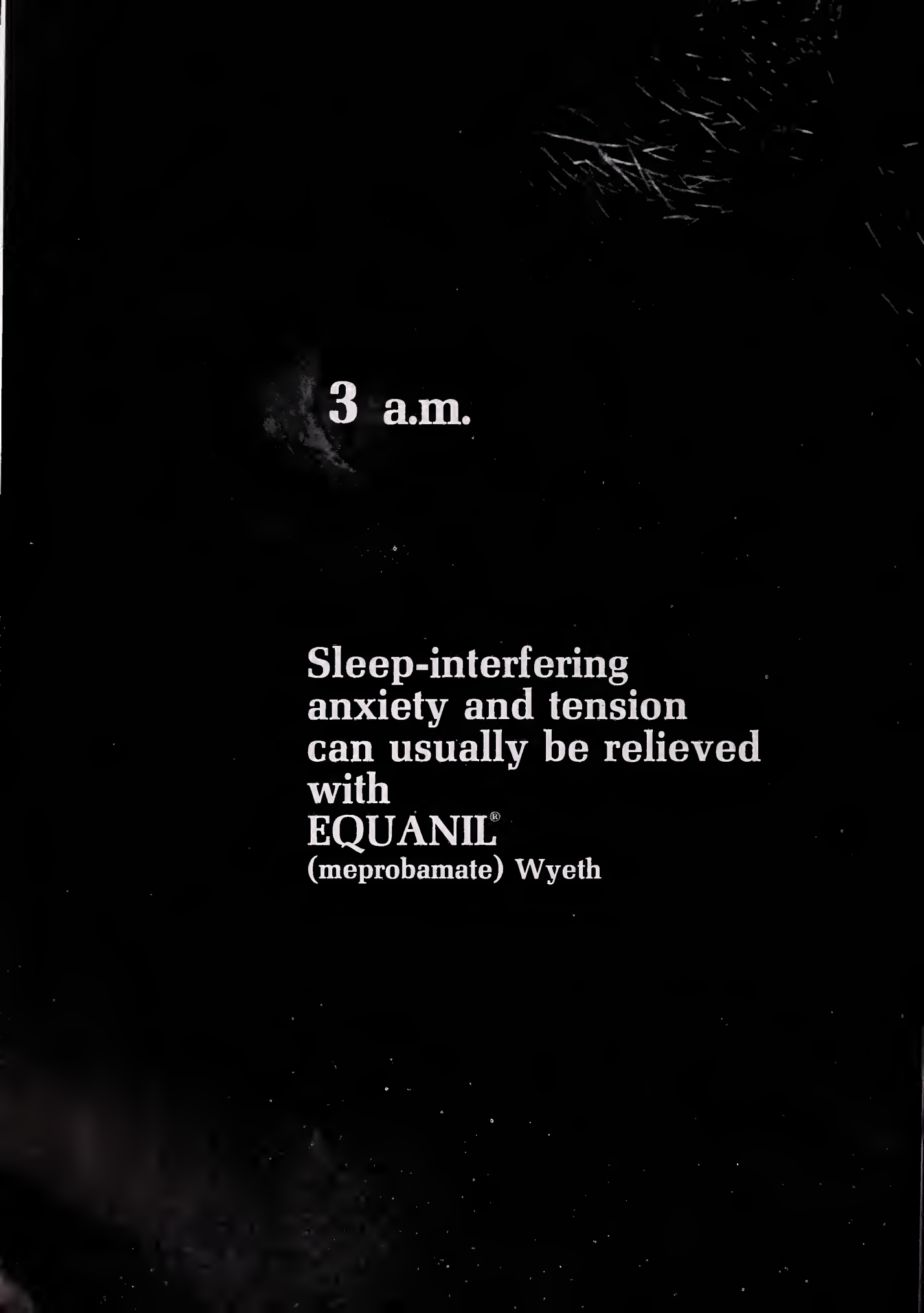
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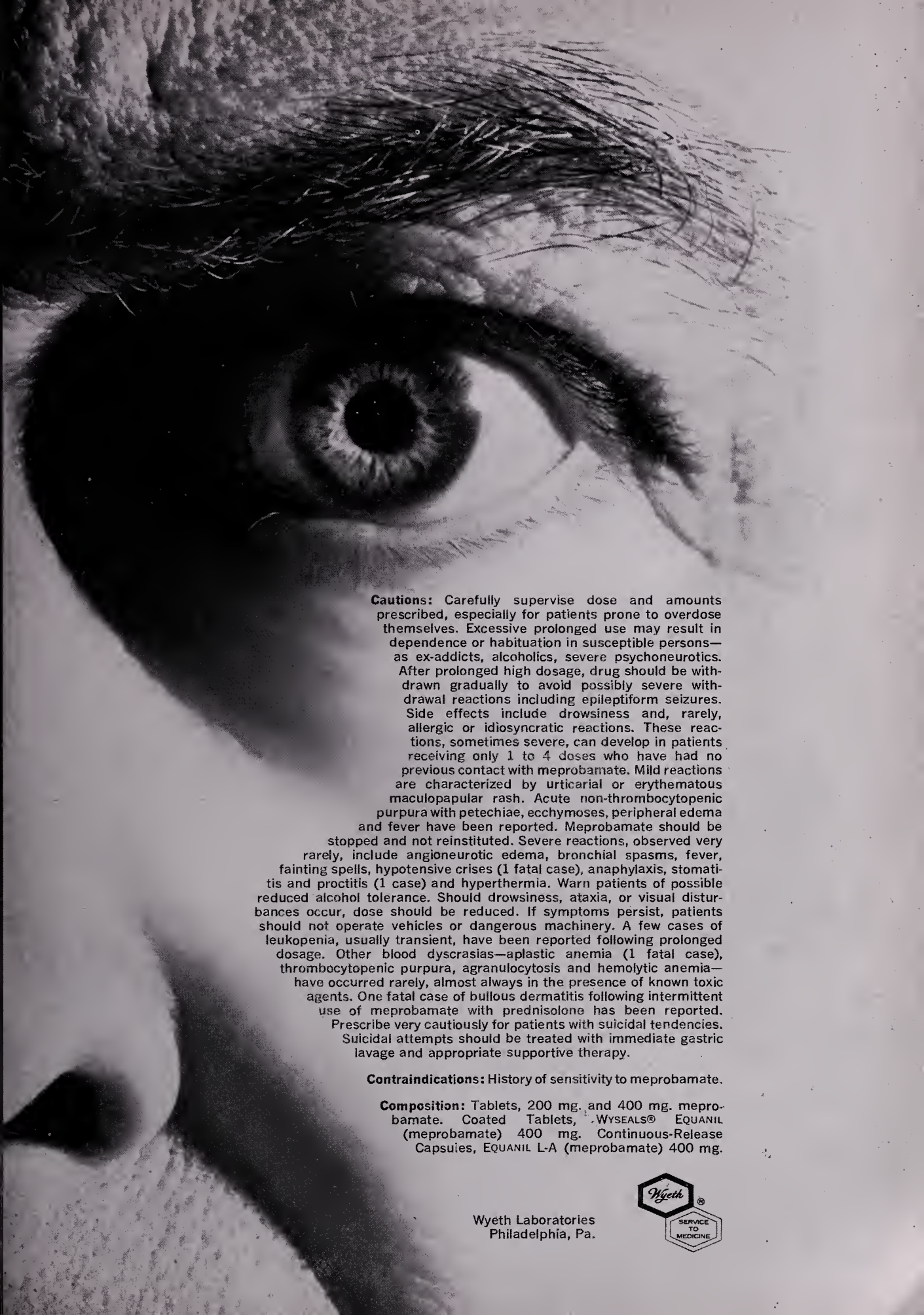

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Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage—*Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions)

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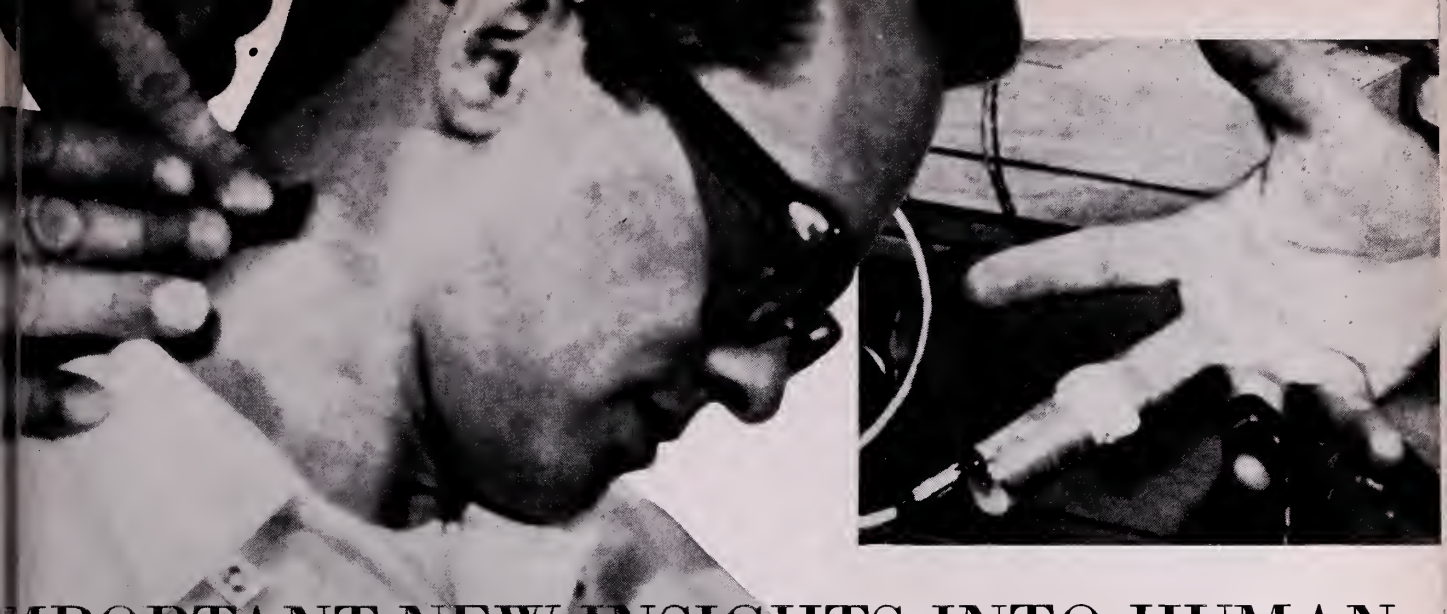

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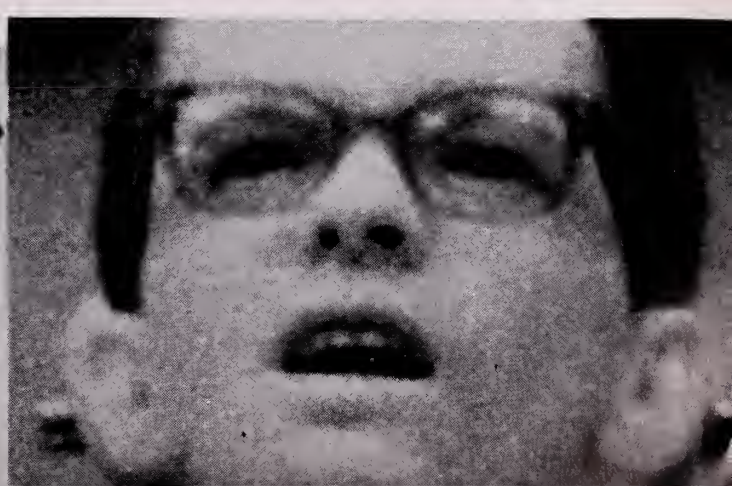

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WE HAVE ALL by now had experience with Public Law 89-97, "Medicare," Title 18, Parts A and B. It may or may not be to our liking but, like, it or not, it is the law, and for the benefit of our patients and for the practice of medicine we must all try to live with it where we must and to amend it where we can. Also, there is Title 19, or "Medicaid," recently passed by the 89th Congress, the most health-minded, welfare-inclined Congress which has ever convened. Our state legislatures have recently met and passed enabling legislation which will authorize the enactment of Title 19. This is a far cry from the Kerr-Mills legislation which we favored, but it is the law of the land. With the concerted effort of each and every physician it can, and must, be kept under control, be made palatable and financially responsible. He who does not voice his opinion, does not participate actively, and does not support this effort, deserves to have his tax dollar spent unwisely.

Federal intentions

There is still another Public Law, 89-239, the so-called Heart, Cancer and Stroke law, which covers more ground than any other health law presently in the books. Please note that the law covers heart disease, cancer, stroke *and related diseases*. This latter portion can be expanded to apply to any body system and to nearly any disease or complication thereof. It involves all specialties in the practice of medicine. I would like to quote from a recent message delivered in Washington, D. C., on January 16, 1967, by Wilbur J. Cohen, Undersecretary of the Department of Health, Education, and Welfare: "We are entering a new era of health care, an evolutionary, almost *revolutionary* period. Our chief concern is the achievement of high quality, comprehensive care for all Americans. We are keenly conscious of not only the expanding medical services to many groups, which have been without them in the past, but also with the provision of a higher quality of medical service for all of the population. *The Government can see to it* that, in ever increasing numbers, professional competence is ever present in providing patient care." (Italics mine.)

These few sentences by Mr. Cohen certainly leave no doubt of the intentions of his Department. This program is now in the planning stages and it behooves each of us as physicians to lend all of our efforts toward the control of this program. I urge you to read the law and to become active in the planning and advisory groups in your respective communities, states and regions, or we will soon be experiencing even more governmental control of medicine.

A. L. Vadheim, M.D., President,
The Montana Medical Association

THE SUCCESSES of medical science in the last thirty years in areas such as antibacterial chemotherapy and heart surgery stand in contrast to its limited abilities to prevent or treat degenerative disease — atherosclerosis, emphysema, cancer and the like. The causes of degenerative disease are multiple and subtle, and not so susceptible to frontal attack, experimentally or therapeutically. Part of the problem is the difficulty in distinguishing between "normal" aging processes and abnormal or accelerated processes due to defective heredity or altered environment. Man knows he is mortal, but resists premature death, and is poorly consoled when many who in previous years might have

Time for a change

fallen victims to pneumonia or tuberculosis are saved, only to be felled in their middle years by coronary artery disease. Evidence is growing that the increasing incidence of degenerative disease may be partly due to changes in the air we breathe, the food we eat, and the tensions we live under. Any attempt to prevent or modify these changes may well involve basic alterations in the living patterns of the members of our modern, industrial society.

It is generally agreed that factors which increase the risk of coronary artery disease, the chief killer, include cigarette smoking, hypertension, obesity, lack of exercise, excess blood fats, diabetes, and the presence of the disease in relatives. Dr. Henry Russek, in an editorial in the Medical Tribune of March 15, 1967, adds "stressful living" to this list and points out that a high fat diet is not necessarily atherogenic unless combined with stressful living. Conversely, data from the concentration camps of World War II indicate that stressful living is not necessarily atherogenic unless combined with a high fat diet. Dr. Russek emphasizes that chronic tension may contribute to the other risk factors by causing compulsive eating, drinking and smoking; by raising the blood pressure, blood fats, steroids and catecholamines; and by causing chronic fatigue which leads to avoidance of exercise. Recent studies have shown that a physically active individual is also less likely to die from his first heart attack than a sedentary one. Other studies show that obese adolescents may actually eat less than their thin companions, their extra fat being due to lack of adequate exercise.

The practicing physician, in daily contact with coronary artery disease and aware that by virtue of his profession he may be more susceptible to it himself, has a personal and professional stake in trying to alter some of the risk factors. He knows how difficult it is to persuade patients to curtail smoking and overeating. He is aware of the problems connected with a treatment program, let alone a preventive program, which is based on self-discipline and self-denial. And he wonders how it is possible to reduce stress or at least to modify its effects in himself and others caught up in competitive, high speed urban living. Among physicians, the increase in partnership and group practice and the growing custom of regular vacations and long weekends show an awareness of the need for even the strongest to have adequate time away from work. Unfortunately, many of these rest periods are used to pursue a sport or hobby compulsively or for social activities which leave the individual more tired at the end of his "recreation" than before. It makes more sense to set aside a part of each day for activities designed to reduce stress and the effects of stress. Considerable evidence is accumulating that half an hour or more daily devoted to progressive, rhythmical, nonstop physical exercise is an excellent way to relieve emotional tension, relax chronically contracted muscles and prepare the body to participate in weekend skiing, hunting and other sports without undue risk or discomfort. Dr. Thomas K. Cureton, Professor of Physical Education at the University of Illinois and a leading proponent of physical fitness, believes that endurance training of this type is a good way to strengthen the heart and cardiovascular system and prevent coronary artery disease. His system of exercise is outlined in a recent book, "Physical Fitness and Dynamic Health," published by the Dial Press in 1965, and in a Time-Life Special Report, "The Healthy Life," published in 1966. Those who have been fortunate enough to observe him in action are easily convinced, since at age 65 he can outperform many college athletes.

If people cannot be induced to diet or to stop smoking, can they be induced to exercise? There are indications that they can, particularly if exercise is made fashionable and taught properly in the schools. The President's Council on Physical Fitness, the fifty-mile hikes of the New Frontiersmen and the well-publicized vacation activities of the Kennedys, MacNamaras, Udalls, etc., have made the country more conscious of fitness than at any time since the days of Teddy Roosevelt. Americans have started taking honors in fields previously dominated by foreign athletes, such as long-distance running, mountain climbing and skiing. There is a boom in recreational equipment which is not due entirely to our increased affluence. Well-known

people, such as Reverend Billy Graham, testify to the beneficial effects of exercise in popular magazines. Evidence is slowly accumulating and is being communicated to the public which suggests that proper exercise, performed regularly, can help in reducing excess weight, lowering blood fats and blood pressure, and decreasing fatigue.

I believe that we, as physicians, should take a leading part in this type of preventive medicine comparable to our efforts in therapeutic medicine, and I do not believe we should wait until its good effects are proved beyond any doubt. Any one of us who has taken the time and trouble to "get in shape" and then has hiked in to fish the high lakes that the tote-goats can't reach, has taken a fast run in virgin deep powder from the top of the mountain, has climbed all day to sit in front of a fire on a high saddle and watch the shadows of the peaks in the valley below, or has merely stayed home and noticed that his step is springier, his waist smaller, and his day less fatiguing—needs no further proof.

Warren D. Bowman, Jr., M.D.,
Montana Scientific Editor

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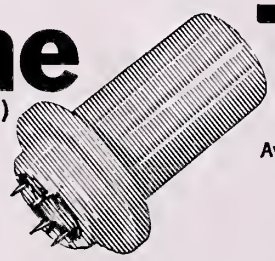

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Reversible sideroblastic anemia during infectious mononucleosis*

Report of a case

Warren D. Bowman, Jr., MD, Billings, Montana

ANEMIA HAS BEEN KNOWN TO OCCUR as a complication of infectious mononucleosis since 1943[1], but is uncommon and in one series of 300 cases was present in only six[2]. It has usually been hemolytic although in at least one of Read and Helwig's cases[2] and in Shapiro and Horwitz' case[3] it was clearly non-hemolytic. The following report concerns a patient with infectious mononucleosis who developed anemia with reversible changes in marrow sideroblasts resembling those seen in "sideroblastic" anemias.

CASE REPORT

A 20-year-old white male college athlete was seen on August 10, 1963, because of a five-week history of fatigue and a two-week history of headache and pain on moving the eyes followed by a sore throat, post-nasal discharge and left upper quadrant pain. He had lost 14 pounds. He had been seen by another physician the previous January because of a headache and sore neck, and a blood examination on January 2, 1963, showed a hemoglobin of 14 gm. per 100 ml., a hematocrit of 42%, a white cell count of 6100/mm^3 with 57% neutrophils, 3% eosinophils, 8% monocytes and 32% lymphocytes, and a heterophile agglutination positive to 1:14. He donated a pint of blood shortly after that and during the spring of 1963 played a season of college baseball.

Physical examination showed a well-developed, tanned, febrile white male with a temperature of 102° F. and blood pressure of 120/40. There was injection of the nasal and pharyngeal mucosa and multiple soft palatal petechiae. The tonsils were slightly enlarged. Many ½-1 cm. lymph nodes were felt in the posterior cervical and occipital regions and a few in the axillary and inguinal areas, both epitrochlear nodes being palpable. There was a grade I systolic murmur along the left sternal border. The spleen was felt two fingerbreadths below the left costal margin; the liver was not clinically enlarged but there was tenderness to percussion over the right lower anterior rib cage. Laboratory studies included a hemoglobin of 10 gm. per 100 ml., a hematocrit of 33%, a white cell count of 13,900/mm^3 with 15% neutrophils, 6% stabs, 78% lymphocytes and 1% monocytes. Platelets were 168,000/mm^3, reticulocytes, 1.1%, the mean corpuscular volume 92 u^3, the mean corpuscular hemoglobin 29 uu, and the mean corpuscular hemoglobin concentration 32%. The bilirubin was 1.8 mg. per 100 ml. one minute direct and 3.2 mg. per 100 ml. total. Direct and indirect Coombs' tests were negative, the heterophile agglutination positive to a dilution of 1:1792, the Kahn negative, the alkaline phosphatase 43.5 King-Armstrong units, the serum glutamic oxalacetic transaminase 360 SF units, the serum glutamic pyruvic transaminase 320 SF units. The urinalysis and chest x-ray were negative. On the peripheral smear, the red cells tended to be somewhat small with some anisocytosis and poikilocytosis (Fig. 1). A sternal marrow (Fig. 2) was normocellular with a relative erythroid hyperplasia and a myeloid-erythroid ratio of about 2:1. There was a relative increase in basophilic normoblasts with occasional multinucleated forms, but erythroid maturation was definitely normoblastic rather than megaloblastic. Many late normoblasts showed ragged and vacuolated cytoplasm with poor hemoglobinization. Myeloid and megakaryocytic elements were not remarkable except for a considerable decrease in segmented neutrophils, stabs, and metamyelocytes, and the presence of occasional atypical lymphocytes. The Prussian-blue reaction showed that 37% of the normoblasts were sideroblasts and 34% were "ringed" sideroblasts (Fig. 3).

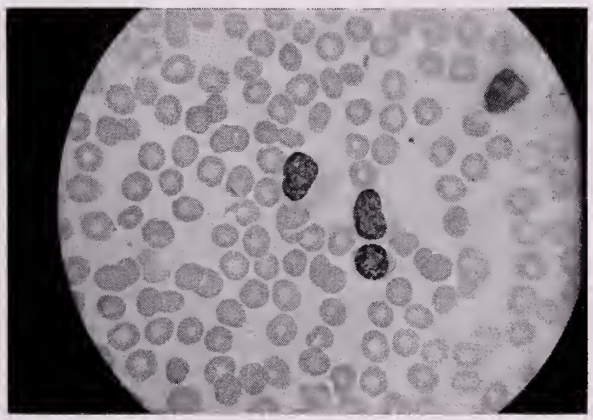

Fig. 1. Peripheral blood smear, August 10, 1963, Wright's stain, X970.

*From the Department of Medicine, Billings Clinic, Billings, Montana.

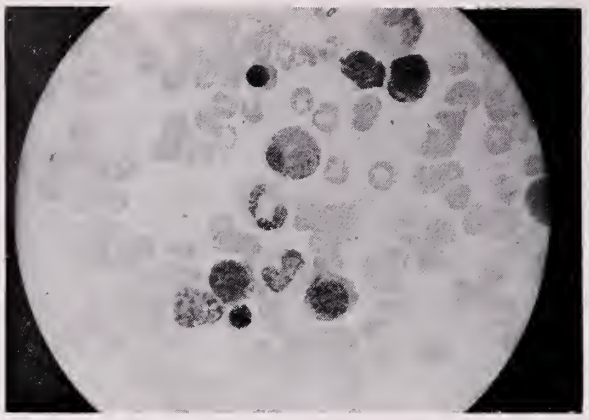

Fig. 2. Sternal marrow smear, August 13, 1963, Wright-Giemsa stain, X970.

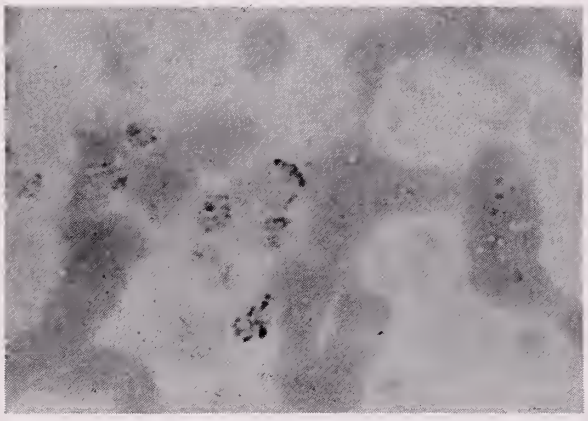

Fig. 3. Sternal marrow smear, August 13, 1963, Prussian-blue stain with aqueous safranin counterstain. Group of "ringed" sideroblasts.

Because of the appearance of the marrow, further studies were done to test for a possible pyridoxine responsiveness. The serum iron was 201 u per 100 ml. (normal 65-175 u per 100 ml.) and the total iron-binding capacity 349 u per 100 ml. (normal 252-410 u per 100 ml.). The free erythrocyte protoporphyrin was 65 u per 100 ml. of red cells (normal) and the free erythrocyte coproporphyrin 0.8 u per 100 ml. (normal).* A tryptophane-loading test was negative.**

While in the hospital the patient initially ran a daily fever of 101-102° F. which gradually fell to 99° F. by discharge on August 19. The bilirubin was 0.7 mg. per 100 ml. one minute direct and 1.5 mg. per 100 ml. total by this time. On August 29, after completion of the tryptophane-loading test, therapy with pyridoxine was initiated in a dosage of 50 mg. t.i.d., orally, and a week later the reticulocytes were 5.6%. Although the patient felt better and his appetite had improved, there was no appreciable gain in hemoglobin for another month (see Table 1). The lymph nodes were no longer felt, although the tip of the spleen remained palpable, and there was a gradual gain in strength and weight. On September 11 a serum glutamic oxalacetic transaminase was 47 SF units and on October 31 a bromsulfalein retention was 1% at 45 minutes. A repeat sternal marrow on September 11 showed normocellularity with normoblastic erythroid hyperplasia and a myeloid-erythroid ratio of about 1:1. The normoblast cytoplasm was generally more abundant and hemoglobinization better, with more late myeloid forms (Fig. 4). There were now 12% "ringed" and 21% total sideroblasts.

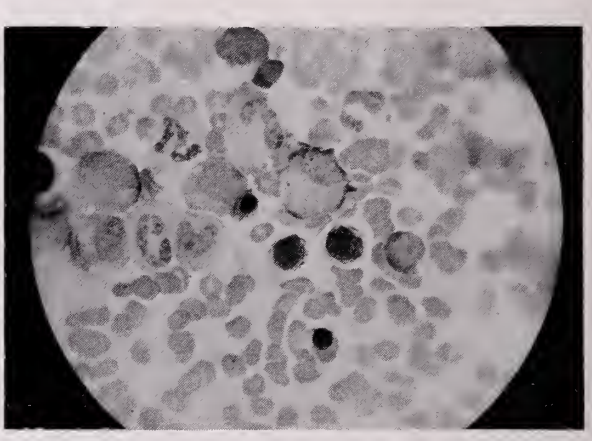

Fig. 4. Sternal marrow smear, November 29, 1963, Wright-Giemsa stain, X970.

By November 29 the patient was no longer anemic although the red cells still appeared somewhat small and there was some anisocytosis and ovalocytosis. A sternal marrow was now normal with 2% "ringed" sideroblasts, 9% total sideroblasts. The splenic tip was still palpable on inspiration.

On May 8, 1964, a pink, papular rash appeared and lasted three days. Examination on May 14 disclosed multiple soft-palatal petechiae and a few ½ cm. lymph nodes in the axillae and inguinal areas. The spleen was enlarged two fingerbreadths below the left costal margin. This illness, presumably rubella, was accompanied by a transient drop in hemoglobin which had improved when checked two weeks later (see Table 1). When seen again on September 2, 1964, the patient felt fine and had been working hard all summer. There were still a few shotty nodes in the cervical, axillary and inguinal areas but no palpable spleen. When last seen on December 31, 1964, after a fall season of baseball, he felt entirely well.

Discussion

The patient showed a mild anemia accompanied by moderate numbers of "ringed" sideroblasts in the bone marrow, which disappeared as the anemia improved. The "ringed" sideroblast, a normoblast with multiple Prussian-blue-positive granules in a full

*I am indebted to Dr. Richard Lee, University of Utah Medical School, Salt Lake City, Utah, for these determinations.

**Chemical determinations kindly performed by Dr. John Price, University of Wisconsin Tumor Clinic, Madison, Wisconsin.

TABLE 1

Date	8-10-63	8-16-63	8-19-63	8-22-63	B_{12} 8-29-63	9-4-63	9-11-63	9-26-63	10-16-63	10-31-63	11-29-63
Hgb		10.2	11.0	10.7	11.7	11.7	11.3	12.0	13.3	13.9	14.3
Hct	33	35	30	34	37	37	33	37	39	41	40
WBC	18000	10500	10000	7500	7500	5500		4250	6500	6500	8250
PMN	11	28	15	19	35	66		24	44	38	47
Stabs	1	6	5	1	3	2		3	6	3	1
Lymphs	86	65	79	78	61	31		69	41	47	47
Monos	1	1	1			1			1	6	
Retic %		2.2	2.1		1.7	5.6	0.8	1.1			
Plts (1000's)	168	183									
"Ringed" sbls	34%						12%				2%

Date	1-15-64	5-14-64	5-29-64	9-2-64	12-31-64
Hgb	13.5	12.5	14.3	14.3	14.3
Hct	40	35	38	42	40
WBC		5000	6500	6500	7250
PMN		39	45	49	51
Stabs		3	1	6	
Lymphs		49	46	40	40
Monos		5	2	3	6

or partial ring around the nucleus[4], is a characteristic feature of the "sideroblastic" or "sideroachrestic" anemias, which have been the subject of two recent symposia[5, 6]. (Since the sideroblast itself is a normal feature of almost every anemia except iron-deficiency anemia, perhaps "dyssideroblastic" would be a better word than "sideroblastic" to call attention to the "ringed" sideroblast as an abnormal cell.) With the electronmicroscope, the "ringed" feature is seen to result from abnormal accumulations of iron-containing non-hemoglobin material in mitochondria situated around the nucleus. The group includes two primary forms: a hypochromic type occurring in young individuals, frequently hereditary and predominating in males, and a normochromic, dimorphic type occurring in elderly patients, occasionally terminating as acute granulocytic leukemia. A number of secondary forms have been observed and are associated with drugs and poisons (lead, myleran, nitrogen mustard, and the pyridoxine antagonists isoniazid, cycloserine and pyrazinamide); deficiency states (malabsorption, partial gastrectomy, chronic alcoholism); "collagen" diseases (rheumatoid arthritis, polyarteritis); other hematologic disorders and malignancies (polycythemia vera, myelofibrosis, thrombocythemia, hemolytic anemia, multiple myeloma, various solid tumors); and with myxedema and febrile illness[4, 8]. It is unclear how many of these cases of secondary "sideroblastic" anemia represent coincidental association of primary "sideroblastic" anemia with some other disease in an elderly individual. Experimental "sideroblastic" anemia similar to the spontaneous disease in humans can be produced in guinea pigs by a combination of cycloserine and isoniazid[9].

Reversible "sideroblastic" anemia has been seen in one other patient with a febrile illness, in patients treated with tuberculostatic drugs, in one patient after nitrogen mustard and marrow autotransplantation, and in one patient with chronic myelogenous leukemia after myleran[4, 8]. Certain cases have also reversed after combinations of pyridoxine with folic acid or Vitamin B_{12}[8]. Whether these represent true deficiencies in the usual sense of the word is questionable, since the doses of pyridoxine given have frequently been outside the physiologic range. Nevertheless, it is of considerable interest that pyridoxine "deficiency," which appears capable of producing a reversible "sideroblastic" anemia alone, can also complicate a primary "sideroblastic" anemia, treatment with pyridoxine consequently producing some improvement in the anemia without disappearance of the "ringed" sideroblasts[8]. The literature on pyridoxine-responsive anemia includes both these types and confusion results from failure to distinguish between the two. More observations on sideroblasts before and after treatment are needed.

The possibility that a "relative pyridoxine deficiency" might be involved in the above patient was tested by a tryptophane load, which was negative. In pyridoxine-responsive anemia, however, this test may be either negative or positive[10]. The improvement in his anemia coincided with the administration of pyridoxine but also occurred during the period of general improvement in the mononucleosis. The significance of the reticulocytosis of 5.6% occurring after a week of pyridoxine therapy is uncertain.

Because of the obvious defects in the heme synthesis in these anemias there has been considerable interest in their porphyrin metabolism. Heilmeyer has found elevated erythrocyte coproporphyrin and decreased or absent protoporphyrin in the hereditary, hypocromic type and elevated coproporphyrin with normal or slightly increased protoporphyrin in the primary normochromic type[11], whereas Dacie and co-workers found elevated coproporphyrins with normal or slightly decreased protoporphyrins in the latter type[12]. Heilmeyer feels that there is a defect in the enzyme responsible for converting coproporphyrin to protoporphyrin in the former type; in the latter he postulates two defects, one between coproporphyrin and protoporphyrin and one between protoporphyrin and heme. Because of the action of pyridoxal phosphate as a coenzyme in the production of delta-amino levulinic acid from glycine and succinate, it would be anticipated that pyridoxine deficiency would result in low values for erythrocyte porphyrins as it does in swine with experimental pyridoxine deficiency[13]. This has been the case in some but in others the porphyrin pattern resembled that of one of the primary "sideroblastic" anemias[10]. In the present patient, erythrocyte porphyrins were normal as might be expected since the cells being analyzed were predominantly normal cells whose life span, in the absence of hemolysis, would carry them well into the disease period.

Since the common phenomenon of "ringed" sideroblasts in the bone marrow is associated with so many conditions of diverse or unknown etiology, different clinical and pathological pictures, and differences in porphyrin metabolism, it is hard to believe that the same biochemical process is responsible for mitochondrial accumulation of iron in every case. It seems more probable that this accumulation is a nonspecific result of interference with heme synthesis in different ways and at more than one site in the metabolic pathway. Other factors, such as might affect removal of unutilized iron from mitochondria, may also be involved[14], and these abnormalities may be reversible or irreversible, or may become irreversible due to the toxic effect of iron or other substances. In the above patient, the unknown agent which causes infectious mononucleosis apparently was able in some way to temporarily interrupt the normal hemopoietic process with resulting anemia and reversible mitochondrial abnormalities.

Summary

A patient with infectious mononucleosis is presented whose marrow showed a temporary accumulation of "ringed" sideroblasts accompanied by a mild anemia. His improvement coincided with pyridoxine therapy and subsidence of the primary illness. Possible implications are discussed. •

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Serum protein alterations in myocardial infarction*

Elmer W. Koneman, MD, Billings, Montana

In acute myocardial infarction, a decrease in serum albumin and an increase in the alpha-1 and alpha-2 globulins can be demonstrated in most cases by routine paper electrophoresis. These protein alterations are of limited diagnostic value since they represent a non-specific reaction to tissue injury and may be seen in a variety of acute inflammatory conditions. However, by employing the more refined techniques of immunoelectrophoresis and immunodiffusion, it is possible to identify numerous serum protein subfractions not detectible by routine paper electrophoresis. It is the purpose of this study to determine if quantitation of one or more of these protein sub-fractions might be of aid in the evaluation of patients with myocardial infarction.

Materials and methods

This study includes 35 patients who were admitted to the Billings Deaconess Hospital during 1965 and 1966 with the diagnosis of acute myocardial infarction. Serum samples were taken from each patient upon admission and at two or three day intervals thereafter until discharge from the hospital. All samples were immediately frozen and saved until completion of the series for each patient so that the protein determinations could be run simultaneously. Careful records were maintained on each patient, including a final chart of the clinical, EKG and laboratory data for comparison with the results of the various protein studies.

Immunoelectrophoresis: The micro-method of Scheidegger[1] was employed. 2% Agarose†, prepared in barbital buffer, ionic strength 0.05 and pH 8.2, was used as the supporting medium. Anti-human goat serum was purchased from Hyland Laboratories‡. Electrophoresis was performed in a specially designed migration chamber for 60 minutes at a current flow of 40 milliamperes. Following electrophoresis and diffusion, the slides were stained with aqueous 0.1% Thiazide Red-R and dried for permanent storage.

Immunodiffusion: Using a double diffusion agar technic developed in this laboratory[2], the following serum protein sub-fractions were quantitated, using purified antisera purchased from Hyland Laboratories: Gamma-G, Gamma-A and Gamma-M immunoglobulins; transferrin (siderophilin); ceruloplasmin; haptoglobin; beta-lipoprotein, alpha-2 macroglobulin and orosomucoid. In brief, this method employs molten 2% agar which is layered to a thickness of 2-3 millimeters on a 3 x 2 inch microscope slide. After the agar hardens, two troughs are cut parallel to the long axis of the slide. On either side of each trough is drilled a series of serum wells, which are filled in sequence with serial dilutions of the test serum. Each trough is then filled with antiserum specific for the protein fraction being measured. The slides are placed in a moisturized chamber at 4° C. for 48 hours, during which time the antigen and

*From the Research Laboratory of the Billings Clinic Foundation, Billings, Montana. This study was supported by a grant from the Montana Heart Association.

†Agarose—L' Industrie Biologique Francaise S.A. Gennevilliers (Seine), France.

‡Hyland Laboratories, Los Angeles, California.

antibody diffuse in the agar toward one another, resulting in a series of stainable precipitin arcs at the interface. The highest dilution of test serum still giving a visible precipitin arc represents the titer of the subfraction under study. A control human pool serum is included with each set of determinations as a reference standard.

Starch Gel Electrophoresis: The serum samples from each patient were separated by vertical starch gel electrophoresis by the method of Smithies[3], using a Buchler¶ vertical gel mold. This procedure was done specifically to determine the genetic haptoglobin type for each patient. Following electrophoresis, each gel was horizontally cut into two equal halves, one of which was stained for protein. The second half was stained for haptoglobin by demonstrating its specific peroxidase activity, utilizing a 1% solution of benzidine hydrochloride and 0.3% hydrogen peroxide.

Routine Paper Electrophoresis: The Beckman§ Microzone cellulose acetate method was employed. Daily electrophoretic patterns were obtained on four of the patients with severe myocardial infarction in order to compare the non-specific protein alterations above described with the levels of the various sub-fractions above listed.

Results

Immunoglobulins: Of the 35 patients, 9 showed an elevation in one or more immunoglobulin fractions. In seven cases, the elevation was noted at the time of admission and persisted during the hospital stay. Two of these patients had a markedly elevated Gamma-A globulin on admission; however, both had superimposed chronic inflammatory disease unrelated to their acute infarction. Thus, in only two cases could there be demonstrated any possible relationship between myocardial infarction and a rise in an immunoglobulin fraction, with this rise becoming manifest in each case during the second week following the acute onset of symptoms.

Transferrin: This serum fraction was elevated in five patients, with no obvious relationship to the clinical severity of the infarction or to any of the other laboratory data.

¶Buchler Instruments, Inc., Fort Lee, New Jersey.
§Beckman Instruments, Inc., Fullerton, California.

Ceruloplasmin: The serum ceruloplasmin was elevated in only three of the patients, and did not occur in the absence of a rise in both serum transferrin and haptoglobin.

Haptoglobin: Serum haptoglobin was elevated in 20 patients. In five cases, the elevation was noted at the time of hospitalization, while in the remaining 15 patients, the rise began toward the end of the first week following the onset of symptoms, reaching a peak during the second or third week. The haptoglobin level tended to remain elevated after three weeks following infarction in the majority of patients. In general, the magnitude of the haptoglobin elevation was in parallel with the serum SGOT and LDH, although there were exceptions. Haptoglobin remained elevated longer than the serum enzymes. All of the patients could be classified into one of the three major haptoglobin types, 1-1, 1-2 or 2-2, with no relationship between the genetic type and the magnitude of serum elevation following myocardial infarction.

Beta-Lipoprotein: Following is a comparison of the levels of serum beta-lipoprotein and serum cholesterol in these 35 patients (cholesterol values greater than 250 mg.% were considered elevated):

Beta-Lipoprotein	Cholesterol	No. Patients
Elevated	Elevated	7
Elevated	Normal	6
Normal	Elevated	7
Normal	Normal	15

Thus, 43 per cent of the patients showed normal cholesterol and beta-lipoprotein levels. In the remaining patients there was a poor correlation between these two fractions, with only seven patients having an elevation of both.

Alpha-2 Macroglobulin: Significant elevation of this fraction was seen in only four patients, with no apparent correlation with any of the other laboratory data.

Orosomucoid: Elevation in the serum orosomucoid could be demonstrated in only five of the patients; however, some of the batches of antiserum were contaminated with anti-albumin precluding an accurate evaluation in many cases.

Routine Paper Electrophoresis: Each of the four patients on whom the daily serum electrophoretic patterns were run showed the characteristic elevation in the alpha-1 and alpha-2 globulins, commencing on the second day following infarction. A peak concentration was reached by the sixth day, with return to normal range by the end of the second week. The alpha-2 fraction tended to remain elevated longer than the alpha-1 globulins.

Discussion

In contrast to the serum elevation of various intracellular enzymes following myocardial infarction which have direct derivation from the injured myocardial tissue, alterations in the serum proteins result as a non-specific whole body reaction to acute injury, including also such items as fever, leukocytosis and elevation in the erythrocyte sedimentation rate. Therefore, changes in any of the protein fractions are meaningful only when compared with other clinical and laboratory data.

The serum protein alterations following injury can be classified into "acute phase" and "chronic phase" reactants. The alpha-1 globulins are primarily composed of a number of glycoproteins which can be identified by immunoelectrophoresis. These glycoproteins are usually elevated following various types of acute injury, and the C-reactive protein and serum mucoprotein determinations are based upon this property.

Non-specific glycoproteins also comprise a major portion of the alpha-2 globulins. The alpha-2 globulins also include the alpha-2 macroglobulins, the hemoglobin binding protein—haptoglobin, and serum ceruloplasmin, to which is bound the serum copper. Both haptoglobin and ceruloplasmin have been described as "acute phase" reactants and serum levels may be elevated following acute tissue injury[4,5]. Following injury, the rise in haptoglobin tends to parallel the elevation in serum fibrinogen and orosomucoid, and in some cases has been more sensitive than the erythrocyte sedimentation rate in detecting tissue damage. In the present study, the serum haptoglobin was significantly elevated in 20 of the 35 patients with acute myocardial infarction, with a tendency to mirror the rise in the SGOT and LDH, although the rise in haptoglobin persisted longer than the enzymes. Kiergel and Müller[6] have pointed out this tendency for haptoglobin to remain elevated following myocardial infarction may be of diagnostic value in those cases where suspicious symptoms may have occurred one or two weeks previously, when the serum enzymes may have returned to normal. It also appears that the tendency for the inflammatory elevation in the alpha-2 globulins, as determined by paper electrophoresis, to remain elevated longer than the alpha-1 globulins results from the prolonged haptoglobin response. The presence or absence of an elevated haptoglobin value following infarction was not related to the genetic haptoglobin type of the patient.

Sullivan and Hart[7] and Adelstein, et al.,[8] have reported significant elevation in serum ceruloplasmin following acute myocardial infarction; in this study, a rise was demonstrated in only three patients. The reason for this discrepancy is not immediately evident, although differences in methodology may supply part of the answer. The above authors utilized either the benzidine oxidase test or the enzymatic color reaction produced with p-phenylenediamine dihydrochloride as a measure of the serum ceruloplasmin level. The agar diffusion method employed in this study is dependent upon the number of available antigen and antibody combining sites and is probably a more exacting indicator of the actual concentration. Since the enzymatic activity of a compound is not necessarily related to its concentration, the possibility that ceruloplasmin displays disproportionately greater enzyme activity following acute injury is a possibility that requires further study. It would also be necessary to rule out the presence of interfering compounds which may possess similar enzyme activity.

The "chronic phase" inflammatory reaction, characterized by routine serum electrophoresis as an increase in the gamma globulin fraction, usually follows the acute phase by one or two weeks and is due to the production of serum antibodies. These antibodies are included in one of the three major immunoglobulin sub-fractions known as Gamma-G,

Gamma-A and Gamma-M globulins. Since the level of total gamma globulin as determined by paper electrophoresis may not be significantly altered by changes within one of the immunoglobulin fractions, a separate quantitation is necessary. In this study, nine patients demonstrated an elevation of one or more immunoglobulins; however, in seven cases the elevation was noted upon hospital admission and could be related to a superimposed chronic inflammatory disease. It would appear that immunoglobulins do not develop during the recovery phase of myocardial infarction, and a search for non-related inflammatory disease should be made if elevated serum levels are detected.

A discussion of the clinical significance of the beta lipoprotein fraction is beyond the scope of this paper. A detailed review of lipid metabolism is currently in progress by Frederickson[9] and the specific relationship between serum lipoproteins and coronary artery disease has been discussed by Hatch[10]. Although the number of patients included in this study are too small to draw any conclusions concerning the prognostic significance of lipoprotein determinations in myocardial infarction, it is interesting that greater than 40 per cent of the patients showed no elevation in either the serum cholesterol or the serum beta lipoprotein as measured by the immunodiffusion technic. Measurement of both the serum cholesterol and the beta lipoprotein appears statistically of more value than quantitation of either alone.

Summary

Utilizing a serial dilution immunodiffusion agar technic, quantitation of the serum immunoglobulins, transferrins, ceruloplasmin, haptoglobin, beta-lipoprotein, alpha-2 macroglobulin and orosomucoid was performed on serial serum samples taken from 35 patients during the acute and convalescent stages of myocardial infarction. The acute phase reactant most frequently elevated was serum haptoglobin, which tended to parallel the rise in serum SGOT and LDH, but remained elevated longer. There was no relationship to the genetic haptoglobin type of the patient. The concentration of serum ceruloplasmin was above normal in only three of the patients studied, in contrast to the frequent post infarction increase in enzyme activity previously reported. This may reflect a difference in the enzyme and antibody binding activity of the molecule. Immunoglobulins apparently do not develop secondary to myocardial infarction per se, rather reflect superimposed chronic inflammatory disease if increased values are found. In more than 40 per cent of the patients studied, neither the serum cholesterol nor the serum beta-lipoprotein was elevated, with poor correlation between the serum levels of the two lipid fractions in the remaining patients. •

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Clostridium perfringens food poisoning*

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THE ROLE OF CLOSTRIDIUM PERFRINGENS as the etiologic agent for human food poisoning is now firmly established. In 1945 McClung[1] described four outbreaks of food poisoning after the consumption of chickens steamed the previous day. The symptoms included abdominal cramp, nausea, and diarrhea. In the majority of cases the symptoms began 8 to 12 hours after the meal, with the diarrhea continuing for about 12 hours. Although the affected individuals were weak on the day following the period of symptoms, most of those who were ill were able to continue normal activities. There were no fatalities.

Extensive investigations were undertaken by English workers in order to determine the epidemiology of C. perfringens food poisoning.[2, 3] According to these workers the organisms responsible for this type of food poisoning are atypical strains of C. perfringens type A, differing from other members of the type A group by the production of low levels of alpha toxin (lecithinase), little or no theta toxin production (hemolysin), formation of heat-resistant spores (100 C for one hour or more), and by antigenic constituents which allow them to be grouped into 13 provisional serotypes.

Hall and co-workers[4] at the Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio, examined 83 strains of C. perfringens from a wide variety of sources for their serological relationships, sporulation, heat-resistance of spores, and their hemolytic activity on mammalian bloods. They found that the American food-poisoning strains have a wide variety of characteristics and concluded that C. perfringens food-poisoning outbreaks in the United States were not restricted to strains meeting the criteria of classification described by British workers and that the isolation of large numbers of any strain of this organism from an incriminated food must be considered as having a possible bearing on the etiology of the outbreak.

Many workers believe that this type of food poisoning is caused by the ingestion of several hundred million living cells of C. perfringens. On the other hand, Nygren[5] performed numerous experiments and came to the conclusion that a possible mode of action of C. perfringens in food poisoning was their ability to produce phospholipase C.

There still exists today a certain amount of disagreement as to how C. perfringens causes food poisoning and to whether or not there are food poisoning "strains" of C. perfringens. We undertook the present study in order to clarify and elucidate some of these points. C. perfringens food poisoning is perhaps the largest group of unreported gastroenteritis possibly affecting millions of Americans each year. Conceivably, much of the cases of food borne poisoning of unestablished etiology were caused by C. perfringens.

In this report we wish to present data on the heat resistance of spores of C. perfringens and the lecithinase activity of several isolates of C. perfringens.

Materials and methods

Spores of C. perfringens were prepared by using a modification of the method of Schneider, Grez, and Anelles[6]. The spores were harvested, pooled, and held at 5 C in

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Sorenson's buffer at pH 7.0 until ready to use. Samples of the spore suspensions were stained with malachite green to determine the presence, if any, of vegetative cells. None were found.

The suspension of spores, standardized as much as possible in term of numbers, were exposed to heat in a water bath for varying periods of time. The heated spores were then decimally diluted and plated and spread on a solid medium consisting of equal parts of Bacto Brain Heart Infusion and Bacto Fluid Thioglycollate medium. The plates were incubated in a Case Anaerobic Jar flushed with nitrogen and held at 37 C for 48 hours. The plates were examined with the aid of a Quebec Darkfield Colony Counter. From the number of colonies present after heating, surviving fractions were calculated. One assumption we made, which may be fallacious, was that each surviving spore germinated to form one discernible colony.

The assay for C. perfringens alpha toxin (lecithinase) (phospholipase C) has been developed by numerous workers including Macfarlane and Knight[7]. Phospholipase C is used to designate the enzyme that splits lecithin into a diglyceride and acid-soluble phosphorylcholine[8]. The substrate consisted of an egg yolk suspension which was centrifuged and clarified by the addition of kaolin. A toxin standard assay curve was prepared by using partially purified phospholipase C purchased from the Nutritional Biochemicals Company, Cleveland. Toxin production by the organism was determined by comparing the culture filtrate of C. perfringens with the standard assay curve. The organisms were grown in cooked meat medium and also in Bacto Fluid Thioglycollate medium for 48 hours at 37 C. The cell suspensions were centrifuged at 2,500 RPM for 45 minutes and then passed through a Seitz clarifying filter. The enzyme assay was done by adding the culture filtrate to the substrate (egg yolk lecithin) and measuring the turbidity produced with the aid of a Bausch and Lomb Spectronic 20 spectrophotometer with the wavelength set at 650 millimicrons. The optical density readings were recorded and compared with the standard curve.

The effect of PH of the culture medium on toxin formation was studied employing strains isolated from food borne outbreaks as well as strains from sources other than food poisoning cases.

A study was made of the hemolytic activities of food poisoning and non-food poisoning strains using horse, bovine, sheep, and rabbit blood to determine if hemolytic patterns may be useful as a tool in diagnosing C. perfringens food poisoning epidemics.

Results

The results of the heat resistance of the spores of C. perfringens are shown in Fig. 1. Strains A 48, A 91, and Hobbs 2 were isolated from food poisoning outbreaks. Strains BP6K and UM 115 were soil isolates. Spores of strains from food poisoning cases were considerably more resistant to heating at 90 C. than the spores from strains isolated from the soil.

The standard assay curve for alpha toxin (Fig. 2) was used to determine toxin production by food poisoning and soil isolates of C. perfringens. The data are summarized in Table 1. The organisms were grown in a medium consisting of 10 g. trypticase (Baltimore Biological Laboratory), 2.5 g. proteose peptone (Difco), 0.1 g. magnesium sulfate, 2.5 g. dipotassium phosphate, 2.5 g. yeast extract (Difco), and a final volume (consisting of water and either acid or base to adjust pH) of 500 ml. The growth medium adjusted to pH values of 5.0, 7.4, 8.0, and 9.0 was inoculated. After incubation growth was determined and toxin formation was measured quantitatively. In the table it is evident that the food poisoning strains (A 48 and Hobbs 3) consistently produced more alpha toxin than the soil isolate (BP6K).

Discussion

Various workers have reported quite different data with regard to the heat resistance of spores of C. perfringens. Recently, Canada, Strong, and Scott[9] reported that a strain isolated from food poisoning incident possessed less heat resistance than strains isolated from foods, but not implicated in a food poisoning outbreak. Hall and Angelotti[10] observed that the spores of only 5 of 19 American food-poisoning strains demonstrated heat resistance. In our studies the food poisoning strains had heat resistant spores in comparison with soil strains.

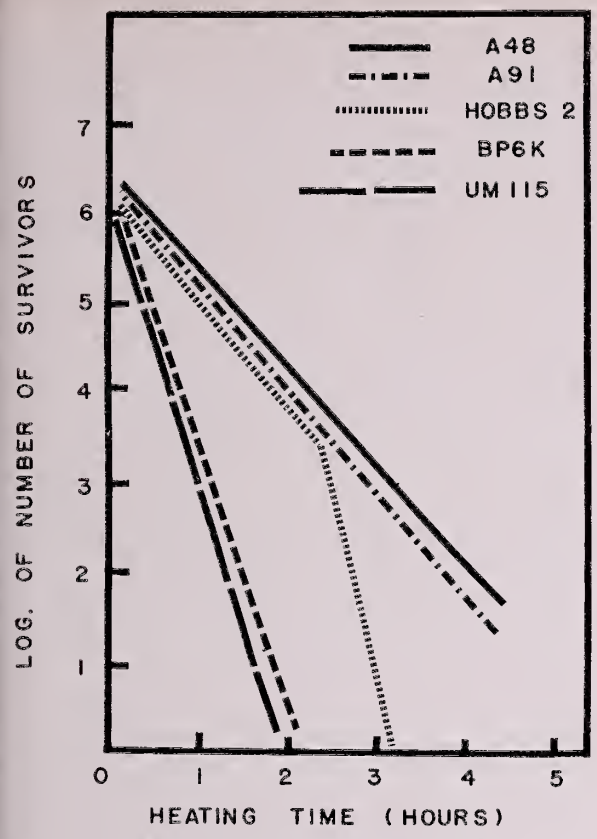

Fig. 1. Heat resistance of spores.

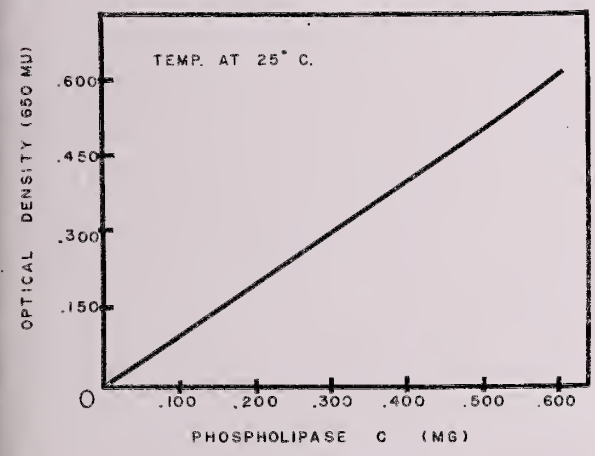

Fig. 2. Standard assay curve.

Table 1
TOXIN PRODUCTION BY CLOSTRIDIUM PERFRINGENS AT VARIOUS pH VALUES

Strain	mg. alpha toxin produced			
	pH 5.0	pH 7.4	pH 8.0	pH 9.0
A 48	0.047	0.054	0.057	0.084
Hobbs 3	0.047	0.059	0.056	0.035
BP6K	0.024	0.015	0.039	0.048

Admittedly, *in vitro* studies on alpha toxin production may not be directly related to the ability of an organism to produce food poisoning; however, our studies suggest a relationship between toxin formation and implication in food poisoning outbreaks. Additional studies with more strains freshly isolated from food borne epidemics will be valuable in firmly establishing this asosciation. Clearly, some physiological or biochemical property of the organisms is responsible for food poisoning, particularly when C. perfringens is a normal inhabitant of the human intestine. Whether there are food poisoning "strains" of C. perfringens or not is difficult to establish. However, from an epidemiologic and diagnostic point of view it is important that we be aware of the possibility that a mutant or variant of the normal flora may cause disease.

Summary

Strains of C. perfringens isolated from food poisoning outbreaks and from the soil were studied in relation to their heat resistance and alpha toxin production. Strains from food poisoning cases possess spores that were comparatively more heat resistant and the vegetative cells from the same spores produced more alpha toxin. •

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The Montana cleft palate program

Twelve years of experience

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History of growth and usefulness of the team approach to a ponderous problem.

Prior to 1954, cases of cleft lip and cleft palate in Montana were handled in a haphazard manner. About the only treatment was surgical repair of the defect. Dental care, orthodontia, speech therapy, and overall rehabilitation were almost completely ignored. Some surgical repairs were done in the state and some elsewhere. There was no registry and no followup.

There is a high incidence of cleft lip and palate in the Indian population of Montana. From primitive times the Indians knew that a cleft palate baby usually died because it was unable to nurse at the breast. Therefore, when an infant was born with such a deformity, the Indians regarded it as a visitation by evil spirits and the baby was abandoned or destroyed. Even today, many of these infants are not claimed by their parents and have remained in Indian hospitals as wards of the government until eventually placed in foster homes.

In 1954, through the efforts of the Montana State Board of Health, a more enlightened approach to problems of cleft lip and palate was sought. Financial aid was requested from the Children's Bureau in Washington, D. C., to carry out a five-year pilot program to determine how services can be rendered to cleft palate cases in a sparsely populated state with a large area. A $50,000-a-year grant was obtained for five years to conduct this program. What started out to be a five-year grant, however, has been continued indefinitely by the Children's Bureau because of failure of the Montana State Legislature to appropriate enough money to finance the Cleft Palate Program on a state level even though the team members in the program urged state participation.

In April, 1954, a two-day meeting was held in Helena, Montana. Guest speakers were Herbert Koepp Baker, M.S., Ph.D., Director of the Cleft Palate Program and Training Program, University of Illinois, and Samuel Pruzansky, D.D.S., Professor of Orthodontics, University of Illinois. By invitation, many people having an interest in some phase of cleft palate rehabilitation attended. Included were otolaryngologists with some training in cleft palate surgery, pediatricians, orthodontists, prosthedontists, pedidontists, speech therapists, public health nurses, private nurses, social service workers, and mental hygienists.

This group became enthusiastic and set about to make Montana's Cleft Palate Program one of the best in the United States. Montana was geographically divided into three sections for the operation of three cleft palate teams, one at Great Falls, one at Billings, and one at Helena. Team meetings were started in September, 1954. Because of a heavy case load, team meetings were held monthly for nine months a year. It was not long before a case load of 400 to 500 patients under active treatment accumulated. At the onset, five or six patients were seen at each team meeting. At later team meetings, we were able to see eight to ten cases daily. In 1954 there were about 18,000 births in Montana yearly. Following the national average of about one cleft palate case in every 700

births, we could expect twenty-five to thirty-five new cases a year, with an average of 33 new cases a year. In the past two years because of a reduction of births due to the use of oral contraceptives, new cases have dropped off about a third. As the backlog of old cases has gradually been seen, treated, and rehabilitated to the best of our abilities, the case load has stabilized. Now we have only six team meetings per year for each team.

The Cleft Palate Group met annually at the invitation of the Montana State Board of Health, held scientific programs, enjoyed nationally recognized authorities as speakers, and discussed our mutual problems. In 1959, we organized the Montana Cleft Palate Association and several of us became members of the American Cleft Palate Association.

At the onset many of the professional people in this program devoted time and services with minimal reimbursement. Surgical, dental, orthodontic and prosthedontic procedures were performed at 35 per cent of the standard fees for such procedures as published in the Montana Average Fee Schedule for physicians and for dentists. After several years, the professional services were compensated at 55 per cent of the average fee schedule. In the past year, professional services have been compensated at 100 per cent.

Administration of the program

The Montana Cleft Palate Program is a program of the Montana State Board of Health, Division of Child Health Services. Professional services and services of agencies are paid by the Board of Health. Service is rendered free to all those unable to pay. However, those who have medical or hospital insurance or those with good incomes are expected to help defray medical-hospital costs. No charge is made to anyone for consultation at a team meeting. Standard record forms have been developed and are used by all three teams. These records, plus photographs, orthodontic models, cephalometric studies, cinefluorography film, and tape recordings of speech have been maintained as permanent records in the State Board of Health, Helena, Montana. The coordinator of the state program arranges the meetings, selects the cases to be seen, and sees that letters and reports are sent to referring family doctors, to family dentists and other interested parties.

The cleft palate team and team approach to problems

There is probably no place in medical practice where the team approach is so essential to good care of the patient as in dealing with cleft palate children where no one person knows all phases of this vast subject. First, a public health nurse is needed to visit the parents of the newborn cleft palate child, allay their fears and sense of guilt or persecution, and explain what can be done and what services are available. Many times I have been the first team member to see and talk with the parents and I have felt that this time was always well spent. Then comes the social service worker who evaluates the home, economic, religious and educational background of the family. She determines the eligibility for services paid in full or in part by the program. Then comes the pediatrician, the surgeon, and hospital personnel. Later, when the child comes to team meetings he is seen by the orthodontist, pedidontist, prosthedontist, audiologist and speech therapist and, in special cases, the psychiatrist or mental hygienist.

At team meetings, we each examine independently all of the cases. Then we thoroughly discuss each case, giving our impressions and recommendations. We have plenty of arguments and disagreements, but we try to decide on a plan of action before talking with the parents. When we have decided on such a plan, the patient and parent are called into the team meeting, a spokesman for the team outlines the problems and course of action recommended, and the parents are given an opportunity to ask questions. The parents get matters clearly in mind before leaving. We have to come to regard the parent or guardian of the child as an important team member. If the parent doesn't cooperate or follow instructions, then a vital part of the overall treatment can fail. This is especially true of dental care and pediatric care.

One of the most important things in overall care is to overcome the feeling of guilt,

of persecution, or superstitions as to the cause of these congenital anomalies. Since the discovery in 1943 that congenital cataracts, congenital heart disease, and congenital deafness could be a direct result of German measles in the mother in the first trimester of pregnancy, much study has been focused on exogenous factors in production of congenital malformations. Andersen[2] makes the following statement on etiology: "We do not know anything about the increasing incidence (of cleft palate); heredity may play some role, but unknown exogenous factors are possibly of greater importance, and I think this field deserves the most thorough attention in future investigations." Broadbent, in discussing etiology of clefts[3], makes the following statement: "Though these findings, like Fogh Andersen's, are of prime importance in the genetic evaluation of clefts, we must remember that much evidence exists supporting the heterogeneous nature of clefts and also there is the factor of non-genetic possibilities in the etiology of clefts. It is likely to be the latter area where major etiologic factors will be found in the future." In discussing etiology of clefts with parents, the concept that clefts could be the result of exogenous influences during pregnancy rather than punishment for their sins, or due strictly to a hereditary background, has helped allay many fears about future pregnancies and created a more cooperative parent.

Another important advantage of the team approach is this: Regardless of economic status, there is no other way that parents can buy the services of all the disciplines of professional abilities represented in the cleft palate team and get the services and opinions resulting from open discussion among team members. Therefore, it is felt that people in all economic situations deserve the advantages of the team approach to cleft palate problems, not just those who are unable to pay.

Cleft palate deformities are catastrophic to the economy of any family regardless of income. If all services for all disciplines were paid for at standard fee schedule, such as hospital costs, medical fees, surgical fees, dental and orthodontic fees, speech therapy fees, hearing aids when needed, and psychiatric or psychologic counselling for a cleft palate child from birth to twenty-one years of age, in many instances it could amount to fifteen or twenty thousand dollars or more. Since these catastrophies happen usually to young couples just getting started, and not to those well established financially, it can readily be seen that most of these people need financial assistance for adequate rehabilitation.

The cleft palate team meetings are highly educational to the team members. I have learned some of the fundamentals of speech therapy, the viewpoint of the orthodontist, the overall philosophy of the pediatrician, the problems of the social worker and public health nurse, and I feel that experiences of this kind over a twelve-year period have been invaluable to me in the conduct of other phases of my professional life. Even in this age of computer medicine, I doubt if anything will be quite as stimulating to me as the thinking and reasoning of my fellow coworkers.

Conclusion

I would like to express this thought: Regardless of what is in store for us in the new era of medicine, I feel that the lessons we have learned through the team approach to complex medical problems as exemplified in the Montana Cleft Palate Program cannot be ignored or disregarded. •

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Mountain states regional medical progam

*The four state Wiche grant**

Frank L. McPhail, MD, Great Falls, Montana**

The goal of the Regional Medical Program is clear. Every individual should have the same opportunity to survive. To achieve this goal, we must first determine what is now available and, next, what is needed in all parts of the region. All health professionals must be consulted. As the planning study develops, it will be possible to recommend action programs. All institutions, agencies, and organizations involved in health care must cooperate if Public Law 89-239 is to be successful.

Public Law 89-239, establishing Regional Medical Programs for Heart Disease, Cancer, Stroke, and Related Diseases, was enacted October 6, 1965. There are two major provisions. The first is to make prevention, diagnosis, treatment, and rehabilitation for these diseases available to all. The second provision fosters cooperation between all health professions, institutions, and agencies to provide this inclusive care. This does not mean that every community hospital should expect to offer every service, but it does mean that all medical services should be available within a region.

Region defined

But what does the term "region" mean? In New England it may be a geographically small but densely populated area; in the Rocky Mountain West, it may be a very large area which includes towering mountains and seemingly endless plains but only a sprinkling of human beings.

The National Commission on Community Health Services, in its publication *Health Is a Community Affair,* emphasizes that the health services necessary to meet the needs of the individual should be available within the environment of the individual's home community. The commission notes that if a community is defined as an area from which services are delivered, we tend to confine these services to the minimum and restrict development of all services.

These restrictions are evident in Montana for they arise from the inherent problems of a sparse population in a large land area. There are 24 counties in the Missouri Plains subregion of Montana (eastern Montana). This region, 62,725 square miles, has a population density according to the 1960 census of 2.3 persons per square mile. The rate of growth is slow. The density for all of Montana is 4.6. (Three of the four states surrounding Montana have population densities almost twice that of Montana's with Wyoming being the exception with a density of 3.4 persons per square mile.)

The residents of this large area, with the lowest per capita income in the state, the highest dependency ratio, and the highest per capita state and local tax bill, need health services as much as those living in cities. For such areas as these, what is a *region?*

Since problems vary with the area, P.L. 89-239 proposes studies to be made independently by regions and defines the region as a "socially and economically cohesive area which relates to a medical teaching and research institution." This point is worth emphasizing. It is the reason that many believe

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this legislation holds greater potential for changing medical education and practice than any single event since the Flexner Report. It brings to the educator in the medical school implicit responsibility to provide the latest knowledge in medicine, not just to his undergraduates but also to those in the front lines of medical practice. The program can be used to establish channels by which the practitioner can influence the postgraduate curriculum by making his needs known.

While the Act does not specify that a region observe state lines, there might appear to be a problem for Montana when the Act definitely specifies that the region "relates to a medical teaching and research institution." The problem is that there is no medical school in Montana, nor in Idaho, Nevada, or Wyoming. Montana's relationship to western medical schools has been primarily through the Student Exchange Program of the Western Interstate Commission for Higher Education (WICHE). This program has provided places for Montana medical students, as well as dental, dental hygiene, and veterinary medical students, in the schools of other western states which are members of WICHE. But Montana's relationship with WICHE helped to solve the problem.

For more than a decade WICHE has been surveying the West's medical manpower needs. The most recent survey dealt particularly with the four-state area of Montana, Idaho, Nevada, and Wyoming. One result of this survey was the formulation of a continuing committee whose purpose was to keep abreast of the changing needs of the four-state region. WICHE was the logical organization to help the four states in light of the stipulations of P.L. 89-239.

With the encouragement and direction of the state medical associations, legislators, and interested individuals, WICHE applied for a grant under the Act. The grant was approved, and the Mountain States Regional Medical Program, involving Montana, Idaho, Nevada, and Wyoming, became active November 1, 1966.

The *region,* therefore, is the four states. Alfred M. Popma, M.D., Boise, Idaho, will head the regional program with the assistance of a small staff and a regional advisory committee composed of three members from each state and a representative from nearly every medical school or center in the surrounding states. Each of the four states constitutes a subregion, with its own small staff and advisory committee.

Advantages of regional approach

The Act provides encouragement and assistance in development of cooperative arrangements within a region so that medical practitioners may provide the latest advances in treatment. Health practitioners, agencies, and organizations are expected to cooperate in a study to determine the needs of the people and find the best method to satisfy these needs. The Act is flexible. It permits the development of different programs to solve varying needs in different regions. Some of these needs are easily identified.

CONTINUING EDUCATION: Methods in all phases of medical care change rapidly. The great need for continuing education is recognized, but the methods by which it may be made available requires study. It is more difficult for a lone physician to be absent from a rural practice than it is for one of many physicians working in an urban area.

The use of new communication devices can make instant review of new knowledge available to the most remote area. The larger urban communities in Montana may develop teaching programs in conjunction with medical schools. Teaching teams may travel to the rural areas, thus providing instruction not only to the physician but also to the allied health professions. We may even find the means to provide temporary coverage while a physician from a remote area studies in a medical center.

The need for continuing education is not limited to physicians. Nurses, laboratory and x-ray technologists, and physical therapists, for example, work under constantly changing concepts. New knowledge must be carried to all who are responsible for the care of the patient.

HOSPITALS: Cooperative planning on a regional basis is possible and can produce better hospital service. Some services may be necessary in only one hospital in an area while others should be offered in nearly every

hospital. We cannot afford wasteful duplication when so much is needed. Cooperation in the larger centers may help eliminate unnecessary duplication of some services, thus saving money on equipment purchases and making the most of the trained personnel available.

In several of the larger cities we have the professional capability to embark on teaching programs. The first step in the development of a cooperative arrangement could be in this direction. Hospital administrators and physicians might share the responsibility. Later, hospitals could improve patient service by avoiding unneeded duplication. Expensive equipment could be shared. Deficiencies could be overcome. Eventually, it should be possible to create, through cooperation with a medical school or center, a training program for physicians. This type of cooperation could be the first step toward the creation of a medical school. Teaching hospitals can be linked to medical schools through newer communication devices. Television tapes with portable play-back facilities become an excellent teaching device. Library service can be greatly improved through a regional program.

MEDICAL MANPOWER: The physician-patient ratio is low in the four states, and is lowest in the more remote areas. The shortage of allied medical personnel, such as nurses, x-ray and laboratory technicians, and physical therapists, is even greater. It is virtually impossible to offer preventive medicine to all people because of lack of professional personnel. It may be possible for specially trained assistants to perform many of the routine tasks now being done by physicians and nurses. Some form of "team medicine" may be the answer to the shortages.

We must be prepared to take a long, hard look at new methods. We are not required to follow old patterns in the treatment of disease. By developing a team approach, the physicians, nurses, and allied medical professionals will be able to care for more people. This may be one answer to the shortage in medical manpower. Indeed, this concept may be the only solution if we are to provide complete medical care in sparsely settled, rural areas. This concept would require not only changes in medical education but also changes in laws relating to medical practice. In addition, the patient must understand not only the need for change but also the critical need for new solutions.

P.L. 89-239 is a vehicle by which we can improve the quality and quantity of medical care in Montana. The challenge is not just to the medical practitioners but to every citizen, yet the extent to which our region may benefit is entirely up to the leadership the medical profession can provide. We must study health care as it is, as it should be, and then develop every possible cooperative arrangement to meet the need. •

Sigmoid diverticulitis*

Current surgical management

Millington O. Young, MD, Earle Stine, Jr., MD, and John F. Green, MD, Bozeman, Montana

Early surgical treatment is often conservative management.

EXTENSIVE REVISION of the surgical management of diverticulitis of the colon has occurred in the past fifteen years.[1] Prior to this period, it was accepted that operative treatment was indicated only when there were complications of the disease. It may now be stated that surgical treatment is indicated to prevent complications as well as to treat those that have already occurred.

This seemingly more radical approach is a logical development of the numerous advances that have reduced the morbidity and mortality in all fields of surgery. The concept of definitive surgical treatment to prevent serious complications is well established in the fields of biliary and gastric surgery. It has lagged behind in colon surgery because the bacterial flora of the intestinal tract are capable of causing the most serious infections encountered within the abdominal cavity. Such infections frequently followed colon operations in the pre-antibiotic era. Conservative medical management of diverticulitis became firmly established and all efforts were made to prevent operation. Elective colon operations were limited almost entirely to treatment of carcinoma, and many of these procedures were performed by technics which have now been discarded. As a result of advances making all surgical procedures safer, new indications for the surgical treatment of non-malignant disease of the colon have emerged along with new technics of performing the operations.

It is the purpose of this study to review the cases of sigmoid diverticulitis treated by resection with particular reference to morbidity and mortality of resection and to attempt to further delineate the indications for the different procedures. During the twelve-year period, 1953 through 1964, sixty patients were treated by resection on the service of the senior author and in the Department of Surgery of Bon Secours Hospital, Grosse Pointe, Michigan. They are divided into two groups, 21 being treated during the first six years and 39 during the second six-year period. The increased number of patients treated during the second period is indicative of both the increasing incidence of this disease (as the average age of the population increases) and the increasing frequency with which one stage resection has been used in the treatment.

In the entire group, there were 22 men and 38 women. The average age for each sex was 60 years. The number of multiple stage procedures was essentially the same for the two periods. There was more than a three-fold increase in the number of single stage procedures (Table 1).

Table 1
Resections for Diverticulitis

Period	Multiple Stage	Single Stage	Total
1952-1958	12	9	21
1959-1965	10	29	39
Total	22	38	60

*From the Departments of Surgery, Bon Secours Hospital, Grosse Pointe, Michigan, and Deaconess Hospital, Bozeman, Montana. Dr. Stine and Dr. Green were formerly Residents in Surgery, Bon Secours Hospital, Grosse Pointe, Michigan. Their present addresses are Ida Grove, Iowa, and St. Joseph Hospital, Denver, Colorado, respectively.

There were three postoperative deaths among the sixty patients treated by resection, a mortality rate of 5 per cent. All three deaths occurred in patients having single stage resections. A 65-year-old woman died of peritonitis six days after resection. In retrospect, it is believed that the extent of the disease process required a multiple stage procedure. A 75-year-old man died of cerebral thrombosis one day after resection of a lesion that had been diagnosed as carcinoma by x-ray studies. A 65-year-old woman died 62 days after operation of multiple complications which were not related to the extent of the disease process.

The average hospital stay of the 35 patients who survived one stage resections was 15 days. This was in contrast to the many weeks and numerous admissions required when the multiple stage procedures were necessary.

Comment

The complications of sigmoid diverticulitis (generalized peritonitis, abscess, fistula and obstruction) are quite serious and all too often lethal. In 1942, Smithwick[2] was among the first to advocate resection of colonic diverticulitis before complications developed. Boyden[3], in 1950, reported a study which gave considerable impetus to the trend for earlier one stage resection. In 1962, Laufman and associates[1] published an excellent review of almost 300 reports dealing with all aspects of this disease, emphasizing the trend towards earlier surgical treatment.

Although early surgical treatment has received considerable attention in the surgical literature, this concept still needs to be emphasized to general practitioners and internists who treat these patients in the pre-complication stage. That this is true is evidenced by the following statement which appeared in a 1964 issue of Today's Health, a publication of the American Medical Associtaion: "Only in the severe case of diverticulitis, which has progressed to the point of perforation, is surgery needed."[4]

Some writers have recommended one stage resection in the presence of abscesses and generalized peritonitis.[5, 6] However, it is doubtful if this will gain wide acceptance for these patients are often too critically ill for a procedure of this extent. A one stage resection is accompanied by considerable risk if there is an extensive inflammatory process and/or dilatation of the colon proximal to the lesion. It is our belief that if the extent of the pathologic process is such as to have indicated the establishment of a colostomy in the pre-antibiotic era, a multiple stage procedure probably should be performed. Despite the increased morbidity, the safety of this approach must be emphasized. In this series, 22 patients were treated with multiple stage operations without a mortality.

The area for advancement in the treatment of sigmoid diverticulitis is in the selection of those patients who are apt to develop complications at a later date. It is this group that is ideally suited for the elective, one stage, "prophylactic" resection, thereby avoiding the mortality associated with the complications and the morbidity associated with the multiple stage operations.

The indications for elective one stage resection for diverticulitis which have gradually emerged from the reported studies, and which were used in this series, are listed in Table 2. Patients having proved repeated attacks will likely continue to have them despite good medical management. Resection is particularly indicated when repeated attacks are associated with urinary symptoms, indicating proximity to the bladder. Likewise, in persons younger than 50 years of age, early resection is advisable because of the long life expectancy. If persistent narrowing of the lumen is demonstrated on barium enema examination after subsidence of an acute attack, resection should be performed. Operation is indicated if a palpable mass is present.

Table 2

Indications for Elective One Stage Resection for Diverticulitis

1. Repeated attacks—particularly if
   A. Associated urinary symptoms
   B. Age under 50 years
2. Persistent narrowing of lumen—after subsidence of acute attack
3. Palpable mass
4. Possible carcinoma by x-ray

When the possibility of carcinoma is indicated by x-ray examination, operation must not be delayed. Hemorrhage was not an indication for operation in this series. However,

repeated bleeding from the colon in a patient with diverticulosis and no other demonstrable cause should be listed as an indication for elective resection.

Recent studies have emphasized the little known fact that the colonic musculature undergoes considerable hypertrophy in chronic recurring cases of diverticulitis.[7, 8] The musculature measured up to 2 cm. thickness in one specimen in this series, removed in a one stage procedure during a quiescent interval. This hypertrophic change may account for narrowing of the lumen observed on barium enema examination and often attributed to spasm or scarring.

Some points of surgical technic which have not received adequate attention should be mentioned. A cystoscopic examination should be performed immediately prior to resection and a catheter inserted into the left ureter to facilitate dissection of the left colon. It is not possible to predict with accuracy the ease or difficulty of the dissection from the preoperative evaluation of the patient. A retention catheter should be inserted into the bladder to keep it empty and in the event it needs to be opened during the procedure. The retention catheter is pulled down until the inflated bag rests against the bladder neck. The previously inserted ureteral catheter is then taped to it and both are taped to the patient's thigh.

In those instances where the differential diagnosis between diverticulitis and carcinoma is difficult at the time of operation, a colotomy incision should be made proximal to the lesion to allow palpation with a finger inserted into the lumen and/or visualization of the mucosa with a sigmoidoscope. These procedures, particularly palpation, greatly facilitate recognition of carcinomas which involve the mucosa in contrast to the extraluminal inflammatory mass of diverticulitis.

Summary

The surgical treatment of sigmoid diverticulitis should be designed to prevent the dreaded complications rather than being reserved to treat them after they have occurred. A brief summary is presented of a study of the case records of sixty patients treated by resection. Indications for elective, one stage "prophylactic" resection and for the multiple stage procedures are discussed. •

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Diaphragmatic hernia

Obstruction and strangulation of abdominal viscera

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Several case reports emphasize a treacherous clinical entity.

ABDOMINAL VISCERA may become incarcerated, obstructed and/or strangulated in diaphragmatic hernias. Such situations represent surgical emergencies, and the diagnosis and management is sometimes fraught with problems. We have encountered a few of these problems in our study of four cases of diaphragmatic hernia complicated by obstruction and/or strangulation. Because our errors and failures have been as interesting, and probably more instructive, than our successes, we have been encouraged to present the following case reports. It should be noted that instances of incarcerated and obstructed esophageal hiatus hernias have been purposely excluded from this paper because of the different pathologic anatomy and surgical problems involved.

CASE REPORTS

Case 1. A 30-year-old white woman was admitted to St. Vincent's Hospital in Billings, Montana, after several days of nausea, vomiting, obstipation and cramping abdominal pain. There was a history of "pneumonia" and an operation on the left side of her chest elsewhere at the age of eight or ten years. On examination she was afebrile and did not appear acutely ill. The abdomen was moderately distended and tender grade 1 (on the basis of 1 to 4) in the left lower quadrant. Hemoglobin was 13.5 grams per 100 cc, leucocyte count was 12,900 with a normal differential, and urinalysis was negative. A thoracic roentgenogram showed marked elevation of the left leaf of the diaphragm and density in the left costophrenic angle. Abdominal roentgenogram showed greatly dilated loops of large bowel, and barium enema demonstrated complete obstruction at the splenic flexure. On the day of admission emergency transverse colostomy was carried out. The patient made an uncomplicated recovery from this procedure and was dismissed on the 15th postoperative day. Two weeks later she was readmitted, and, after adequate preparation of the bowel, the abdomen was explored through a left subcostal incision. There were many adhesions in the left upper quadrant and a defect in the posterolateral aspect of the dome of the left diaphragm. The defect measured about one inch in diameter, and through it approximately six inches of the splenic flexure of the colon and a large portion of the gastrocolic omentum had entered the left pleural space. The bowel was incarcerated and completely obstructed but viable. It was densely adherent to the pleura and pericardium and to the margins of the diaphragmatic defect. The latter was enlarged, and the contents of the hernia were mobilized with some difficulty and replaced in the abdomen. The omentum was partially removed because of fragmentation and bleeding. Repair of the diaphragmatic hernia and closure of the abdomen were accomplished without difficulty. Temporary, closed drainage of the left pleural space was established by intercostal catheter. Following these procedures there were no complications, and the patient was dismissed on the 11th day. Approximately two weeks later the transverse colostomy was closed, and she has remained well during the several intervening years.

Case 2. A 24-year-old white man was admitted to St. Vincent's Hospital complaining of severe epigastric pain which had begun a few hours previously. The pain was accompanied by retching and vomiting, and an enema had been taken without benefit. The patient stated he had had a similar episode approximately one year before and appendectomy had been performed elsewhere. For some time he had experienced episodic "indigestion", but ordinarily his appetite and digestion were good. On examination he appeared moderately ill. The blood pressure was 140/100 and the temperature was normal. The abdomen was scaphoid and non-tender. There was an old McBurney scar. Auscultation of the heart was normal. Examination of the lungs revealed dullness and decreased breath sounds in the lower third of the left thorax. Rectal examination revealed no abnormalities. The hemoglobin was 19 grams per

100 cc of blood and the leucocyte count was 25,000 with a preponderance of polymorphonuclear cells in the differential. Urinalysis was negative, and the serum amylase was normal.

The patient was admitted late in the evening, and during the night he continued to have pain but the vital signs remained stable. At 7:30 a.m. the following day he complained of being hungry and at 8:15 a.m. was taken to the x-ray department. He walked from his bed to a wheel chair, refusing a cart, and did not appear to be in pain. On the elevator he suddenly died.

An autopsy was performed. There were approximately 1000 cc. of slightly cloudy, yellow fluid in the peritoneal cavity. In the middle of the dome of the left diaphragm there was a defect measuring two centimeters in diameter. Through this aperture approximately four feet of small intestine and a large portion of the transverse colon had entered the left thorax. Both the large and small bowel were diffusely hemorrhagic and perforated in multiple areas, and there were approximately 3,000 cc. of cloudy, foul smelling fluid in the left pleural space. The cecum was in the normal position, and the appendix was surgically absent. Subsequently it was learned that a number of years previously the patient had sustained a wound in the left side of his chest with a sharp pointed instrument.

Case 3. A 61-year-old white man was admitted to St. Vincent's Hospital with a 24-hour history of upper abdominal pain extending into the left shoulder. The pain was described as intermittent, and of a sharp, steady nature. He had been nauseated but had not vomited. His bowels had moved normally 36 hours prior to admission. There had been no previous similar episode of pain.

Four years previously the patient had sustained a severe, crushing injury of the thorax in a tractor accident. He said that both clavicles and eight ribs in the left side of his chest had been fractured. He had been hospitalized elsewhere for 33 days and had undergone left thoracentesis on three occasions. There had been no chest pain or angina and no dysphagia or other esophageal symptoms. Gastrointestinal functions were considered normal prior to the present illness.

The patient appeared ill and was restless and uncomfortable. His blood pressure was 170/90. There was dullness and diminished aeration in the left lower lung field. The abdomen was distended grade 2 (on the basis of 1 to 4) and tympanitic. There was tenderness without spasm in the epigastrium and left upper quadrant. The remainder of the physical examination gave negative results. The hemoglobin was 15.5 grams per 100 cc, and there were 11,800 leucocytes with normal differential. Routine urinalysis and blood urea nitrogen were normal. An electrocardiogram was normal. Roentgenograms of the thorax in the posterior-anterior and left lateral projections revealed opacification in the left lower chest and an orange-sized density with an air fluid level superimposed over the cardiac shadow. There were multiple old rib fractures. Roentgenographic study of the colon was negative.

Exploration was carried out on the day of admission. A left postero-lateral incision was made and a long segment of the 7th rib was resected. This rib had been previously fractured, and the ends had not united. There was a defect approximately two inches in diameter in the dome of the left diaphragm. Through this aperature a portion of the stomach and the omentum had entered the left thorax. The incarcerated and strangulated portion of the stomach was about the size of a large orange, and its wall was dusky and hemorrhagic. Following enlargement of the diaphragmatic defect, it was possible to mobilize the incarcerated omentum and stomach and replace them in the abdomen. The viability of the stomach was unquestionable after reduction of the hernia, and the defect in the diaphragm was easily repaired with silk sutures. Temporary, closed, intercostal drainage of the pleural space was established and the pleura and chest wall were closed in layers. The postoperative course was uncomplicated and he was dismissed on the 10th day.

Case 4. A white girl, age 2½ years, was admitted to St. Vincent's Hospital with a two-day history of abdominal pain and upper respiratory symptoms. She had been given antibiotics at home but became lethargic and continued to complain intermittently of abdominal pain. She ate nothing except small amounts of liquids, and just prior

Fig. 1. Case 4. Roentgenogram of chest showing air-fluid shadow in left thorax and shift of mediastinum to the right, in a case of congenital diaphragmatic hernia with incarceration and obstruction of the stomach.

to admission she vomited previously ingested fluids. About eight months before she had had an episode of vomiting associated with a "respiratory infection". Otherwise the child's past health had been good, and there was no history of bowel irregularity.

Examination revealed some lethargy, but the child was responsive. The respiratory rate was increased slightly but the pulse rate and temperature were normal. The left thorax was hyperresonant and without audible breath sounds. There appeared to be a shift of the trachea and heart to the right. Breath sounds over the right lung were normal. Examination of the abdomen revealed nothing abnormal. There was no tenderness, and bowel sounds were normal. Routine blood and urine studies were normal.

Blood chemical determinations revealed a moderate hypochloremic acidosis. The initial roentgenogram of the thorax (Fig. 1) was interpreted by the admitting physician as representing left hydropneumothorax. Intercostal catheters were inserted, and, when the procedure failed to accomplish drainage of the left pleural space, the proper diagnosis became apparent. X-ray study of the stomach was not entirely satisfactory because of the child's reluctance to take fluids orally, but barium could not be made to enter the air fluid shadow above the left diaphragm (Fig. 2).

Following preparation wtih parenteral electrolytes and fluids, exploration was undertaken as an emergency procedure under general, endotracheal anesthesia. The pleural space was entered posterolaterally through the eighth interspace. The left thorax contained most of the stomach which was enormously distended and tense. The cardioesophageal juncture and the pylorus were the only portions of stomach remaining in the abdomen. In addition, the spleen and a part of the colon were attached to the intrathoracic stomach. These abdominal viscera had entered the pleural space through a congenital, posterolateral, diaphragmatic defect (Foramen of Bochdalek) which was about three centimeters in diameter. All the viscera were viable, and there was no hernia sac. The opening in the diaphragm was enlarged, and a nasogastric tube inserted by the anesthesiologist could then be guided into the dilated stomach. Following decompression, the stomach, colon and spleen were replaced in the abdomen without difficulty. The congenital diaphragmatic hernia was easily repaired with nonabsorbable sutures. The left lung, which initially had been completely collapsed and which had appeared on first inspection to be almost hypoplastic, was re-expanded, and, at the conclusion of the procedure, it nearly filled the pleural space. An intercostal catheter was placed for temporary, closed drainage of the pleural space and the pleura and thoracic wall were closed in layers. Postoperative convalescence was uncomplicated, and the child was dismissed on the 13th day with her gastrointestinal tract functioning normally.

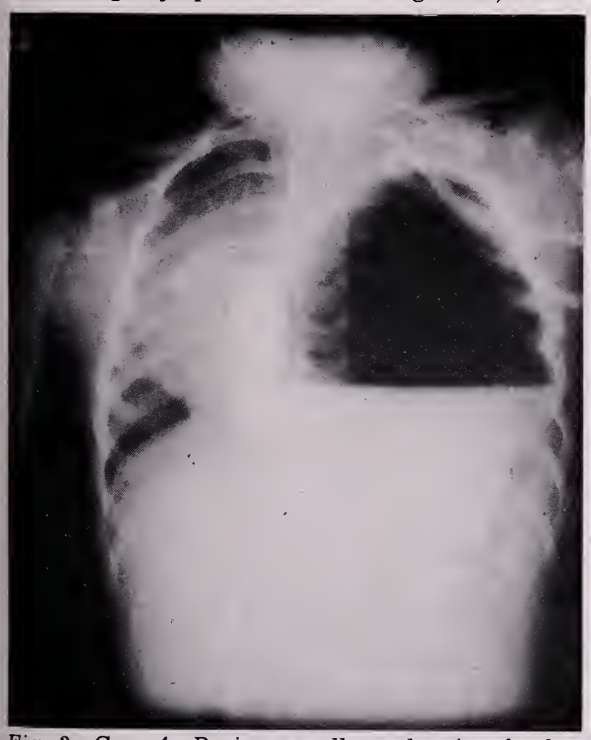

Fig. 2. Case 4. Barium swallow, showing further distension of the stomach. The esophagogastric junction is in its normal location; there is failure of contrast material to enter the incarcerated stomach.

Discussion

The incidence of obstruction and/or strangulation in diaphragmatic hernias is unknown. Carter and Giuseffi[4] in an extensive review of the literature in 1948 found 30 cases of strangulated diaphragmatic hernia and added four cases of their own. A few cases were of congenital origin, but the majority were due to trauma. Twenty-six cases resulted from penetrating injury. Pearson[6] reviewed the literature between 1948 and 1953 and found 31 more cases of strangulated diaphragmatic hernia. In 1958 Bernatz[1], et al., reviewed the experience with 112 cases of diaphragmatic hernia at the Mayo Clinic and found nine patients who presented with acute symptoms due to obstruction of the gastrointestinal tract. Bosher[2] and others, in 1960, found in the literature 17 cases and added two cases of their own of strangulated daphragmatic hernia with gangrene and perforation of the stomach. Sullivan,[8] collecting only cases due to direct trauma, found 53 cases of obstruction and strangulation reported since 1953.

Our cases, as well as many of those in the literature, provide adequate evidence that

diagnosis may be difficult in hernias of traumatic origin. The elicitation of history of injury is most helpful, and the lack of such information in Case 2 contributed to the disastrous result. Several authors have noted the long latent period in some cases between injury and development of complications, and this is especially true of cases due to penetrating injury because the diaphragmatic wound is often small. Probert[7] mentions a patient who 33 years following a war wound developed acute obstruction of the colon due to incarceration in a diaphragmatic hernia.

The diagnostic criteria established in 1853 by Bowditch[3] remain valid: namely, (1) prominence and immobility of the left thorax, (2) displacement of cardiac sounds and trachea to the right, (3) absent breath sounds, (4) presence of bowel sounds in the chest, and (5) tympany to percussion over the left chest. In most cases of incarcerated diaphragmatic hernia thoracic roentgenograms should help to focus attention on the pathologic anatomy. A roentgenogram was made of the chest of three of our patients and gave abnormal findings in all. As in two of our cases the abnormalities may, however, be misinterpreted as being due to parenchymal disease of the lung, gastric dilatation or eventration of the diaphragm, and occasionally the chest x-ray is misleading. Others have also mistaken a greatly dilated, intrathoracic stomach for a tension pneumothorax. In three of our cases roentgen study with barium was of very little help because the contrast material could not be made to enter the obstructed viscera.

We have been impressed by the paucity of significant abdominal findings in some of these patients. Three of our cases (2, 3, and 4) had only mild or no abdominal tenderness. Other authors[1, 5] have alluded to but have not stressed this phenomenon which must certainly be due to the compromised viscus being located in the thorax rather than in the abdomen. Our Case 2 is an example of this situation which contributed to the patient's death.

The present small series of cases illustrates the fact that reduction and repair of incarcerated diaphragmatic hernias may be satisfactorily accomplished by either the abdominal or the transthoracic route. We noted that exposure, reduction and repair of the hernias in Cases 3 and 4 were remarkably simple transthoracically.

Summary and conclusions

Obstruction or strangulation in a diaphragmatic hernia is a surgical emergency. We have presented four cases which illustrate various manifestations of this entity and demonstrate some of the problems in diagnosis and management. Three patients with traumatic hernias had sustained diaphragmatic injury several years prior to development of serious complications. One patient was a child with a congenital diaphragmatic hernia. Diagnosis is facilitated with an adequate history and a proper index of suspicion. Attention to radiographic changes in the left lower thorax is important; these are sometimes minimal. We have also emphasized the importance of not being misled during evaluation of these patients by a paucity of abdominal findings. Early surgical treatment is mandatory if mortality and morbidity are to be avoided. •

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Precautions and contraindications: Frequent, short-lived reactions include: cutaneous flushing, sensations of warmth, tingling and itching, burning of skin, increased gastrointestinal motility, and sebaceous gland activity. In explaining these reactions to the patient, it is suggested that they be regarded as a desirable physiological sign that the niacin is carrying out its intended function of vasodilation. Because of this vasodilation, severe hypotension and hemorrhage are obvious contraindications to Antivert therapy. Although the incidence of drowsiness and other atropine-like side effects such as dry mouth and blurring of vision is low, the physician should alert the patient to the need for due precautions when engaging in activities where alertness is mandatory. **Use in women of childbearing age:** A review of available animal data reveals that meclizine exerts a teratogenic response in the rat. In one study a dose of 50 mg./kg./day (50 times the maximum recommended human dose) produced cleft palate in 2 of 87 fetuses when administered to the rat at critical times during the first 15 days of gestation. At doses of 125 mg./kg./day, meclizine will produce 100% incidence of cleft palate in the rat. At doses of 25 mg./kg./day, decreased calcification of the vertebrae and relative shortening of the limbs were also produced in the rat, but experts disagree as to whether this is a teratogenic response. While available clinical data are inconclusive, scientific experts are of the opinion that this drug may possess a potential for adverse effects on the human fetus. Consequently, consideration should be given to initial use of a nonphenothiazine agent that is not suspected of having a teratogenic potential. In any case, the dosage and duration of treatment should be kept to a minimum. **Dosage:** One tablet or one to two teaspoonfuls (5-10 cc.) t.i.d. just before meals. Specific requirements for individual patients should be determined by the physician. **Supplied:** Tablets in bottles of 100 and 500. Syrup in pint bottles. RX only.

References: 1. Based on 1966 data from independent physicians' market survey organization. 2. Scal, J. C.: Eye Ear Nose & Throat Month. 38:738 (Sept.) 1959.

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Vitamin B_6 (pyridoxine HCl, U.S.P.)	0.5 mg.
Niacinamide, U.S.P.	50 mg.
Calcium pantothenate, U.S.P.	5 mg.
Vitamin E (di-alpha tocopheryl acetate)	5 I.U.
Rutin	5 mg.
Cobalt (from cobalt sulfate)	0.033 mg.
Molybdenum (from sodium molybdate)	0.066 mg.
Copper (from copper sulfate)	0.33 mg.
Manganese (from manganese sulfate)	0.33 mg.
Magnesium (from magnesium sulfate)	2 mg.
Iodine (from potassium iodide)	0.05 mg.
Potassium (from potassium sulfate)	1.66 mg.
Zinc (from zinc sulfate)	0.4 mg.
(2) Hematopoietic Factors	
Iron (from ferrous sulfate)	3.40 mg.
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Pancreatic substance*	50 mg.
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Methyltestosterone, N.F.	1.0 mg.
Ethinyl Estradiol, U.S.P.	0.006 mg.
(5) Amino Acids	
L-lysine (monohydrochloride)	50 mg.
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*Enzymatically active defatted material obtained from 250 mg. of whole fresh pancreas.

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Fetus papyraceous

Robert C. Whitesitt, MD, Helena, Montana

Report of a case of abortion of fetus papyraceous with subsequent survival of second twin.

OF THE MANY COMPLICATIONS of twin pregnancy, that of fetus papyraceous has received less coverage in medical literature than most other complications. A search of recent medical literature revealed a paucity of information on the subject and even standard textbooks of obstetrics devote very little space to this complication.

Fetus papyraceous can occur in either monozygotic (monochorionic) or dizygotic (dichorionic) twin pregnancy, although most authors cite a higher incidence of mortality and malformations in twin pregnancies from a single ovum[4, 11, 12]. In monozygotic twins, the two circulations "anastomose in the common placenta, artery to artery, vein to vein, the intercommunicating villous tree." As a result of this arrangement, many anomalies arise out of the unequal distribution and size of the placental vessels and unequal nutritional conditions, the so-called "placental transfusion syndrome."[6, 7, 8] If fetal death occurs at a fairly early period of gestation, and the fetus is retained in utero, it is compressed by the larger twin, and becomes a "fetus compressus" or "fetus papyraceous." This same phenomenon can occur in dichorionic twins: i.e., early fetal death in utero of one twin, with retention and subsequent compression by the other twin.[1, 2, 3, 5, 6, 7, 8] Usually the fetus papyraceous is found as twin "B" at the time of delivery; in fact, it makes up a small per cent of the mortality of twin "B"[12, 13]. However, in the case to be presented, and in a similar case reported by Glenning[14], the fetus papyraceous was passed first, the normal twin delivered later.

Twins delivered at widely separated intervals have been reported from time to time, almost always associated with uterus didelphys[15]; and this uterine anomaly should be suspected when there is an unusual time lapse between abortion of one twin and delivery of the other; or between delivery dates of two twins. However, in the case presented here, the uterus was normal, with a single endometrial cavity.

Case Report

H. N., a 39-year-old white female, para i, gravida ii, whose last menstrual period was the first week of July, 1963, was first examined in October, 1963, when three months pregnant. Her previous pregnancy, 17 years prior, resulted in delivery of a normal 5 lb. 6 oz. male which survived. There were no complications with the first pregnancy except for an episode of bleeding at six months gestation requiring hospitalization.

The present pregnancy progressed normally until December 28, 1963, at which time the patient began painless bleeding, saturating several napkins. She was admitted at this time for observation; the bleeding subsided and she was discharged three days later.

Past history: Tularemia, age 17. Both bone compound fractures of right leg, age 16. No other significant past illnesses.

Family history: Mother diabetic. Father had carcinoma of larynx, requiring laryngectomy.

Systemic review: Essentially negative. Menstrual periods every 28 days, lasting 3 to 4 days, with some irregularity during the year preceding conception.

Physical examination: A well-developed, fairly well-nourished white female. Weight 126 pounds. Blood pressure 120/68. Normal TPR. Essentially normal physical findings, excluding the pregnancy. Abdominal examination on the first admission revealed a 6 months' fetus, cephalic presentation. Fetal heart tones 144, right lower quadrant. Pelvic examination was not done. Extremities revealed a diagonal scar over the anteriomedial aspect of the right leg, midway between the knee and ankle. No other positive physical findings.

The second admission to the hospital was on January 8, 1964. The patient had done some slight,

Fig. 1.

intermittent spotting following the previous hospitalization, and on the evening of admission there was more spotting and the patient noted some "tissue" at the introitus. She was seen in the home and admitted for evaluation. Uterine contractions began shortly after admission. She was taken to the delivery room, where a fetus papyraceous was found in the vagina and was removed (Fig. 1). Cervical dilatation was minimal and there was no appreciable bleeding; fetal heart tones of the normal twin were satisfactory. The patient was observed for the following four days; all bleeding stopped, and no further contractions ensued. She was discharged on January 12. On January 17, or nine days following abortion of the fetus papyraceous, the patient was readmitted to the hospital with further bleeding and passage of a clot at home. She had irregular contractions at the time of admission, had been examined in the office and admitted immediately to the hospital. Physical findings were essentially as on previous admission, except that labor was well established by the time she entered the hospital. Fetal heart tones were normal.

After approximately two to three hours of labor, the patient spontaneously delivered a living, premature (3 lb. 12½ oz.) male infant over a midline episiotomy. The position was ROA. The baby breathed and cried spontaneously, and was placed in an isolette. The placenta and membranes were expelled intact; two placentas were found to be separate; the placenta from the fetus papyraceous showing almost total infarction. The membrane system was consistent with fraternal (dichorionic) twins. Palpation of the uterine cavity revealed a normal, single uterus.

The mother's postpartum course was uneventful, and the premature infant did well, also. He was discharged on February 9, 1964, weighing 5 lbs. Subsequent course of the baby has been normal.

Summary

A case of spontaneous abortion of a fetus papyraceous with delivery nine days later of a normal premature twin which survived has been presented. Included is a review of medical literature on the subject. •

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Needle biopsy of the liver*

William A. Reynolds, MD, and Wesley W. Wilson, MD, Missoula, Montana

Personal report of good results with an improved method.

Biopsy of the liver by means of a needle for diagnostic purposes has been practiced since before the turn of the century. For several decades the instrument of choice has been the Vim-Silverman needle.[1] In recent years the Menghini needle has gained increasing recognition and acceptance because of its ease of use and safety. In 1957 Giorgio Menghini of Perugia, Italy, described his improved technic, utilizing a needle only 1.2 mm. in thickness, comparable to a 20 gauge needle.[2] The point of the needle has been ground to facilitate entrance of a core of tissue into its lumen. A short, loose-fitting stylette, that prevents the specimen from being aspirated into a syringe, is fitted into the needle at the hub.**

Technic

The patient is prepared for biopsy lying supine in the hospital bed. The skin overlying the lateral liver surface is first washed with soap and water and then with antiseptic solution. Sterile towels are draped about the area. The patient's right arm is adducted across the chest with the right hand grasping the left edge of the bed or side rail. The head and body are turned slightly to the left. The biopsy is generally made through the 9th or 10th intercostal space between the mid and anterior axillary lines in the area of maximum dullness to percussion. After injecting a local anesthetic into the skin and subcutaneous tissue, the skin is punctured with a stylette. Needles of three diameters (1, 1.2 and 1.5 mm.) are available. We have used the 1.2 needle exclusively. The biopsy needle, which is attached to a 10 cc. Luerlock syringe containing 6 cc. of saline, is introduced through the skin into the intercostal muscle. One cc. of saline is then expelled from the system to clear the needle. The plunger of the syringe is then withdrawn to produce 3 to 5 cc. of continuous negative pressure or suction during the biopsy. The patient is instructed to exhale and hold his breath. With a continuous motion, the needle is then plunged approximately 5 cm. into the liver and immediately withdrawn with an elapsed time of less than one second. No rotation of the needle should be allowed as it enters and leaves the liver. The specimen is then easily pushed out of the needle by expressing saline from the syringe into a bottle of 10 percent formalin. Length of the biopsy specimen is usually controlled by the depth of penetration of the needle into the liver.

A second biopsy is sometimes taken in another site if inadequate tissue is obtained or if metastatic malignancy is suspected. Following the biopsy, the patient is asked to lie on his right side for at least an hour and remain in bed with frequent determination of blood pressure and pulse for 24 hours. Examination of the gross specimen is of value. Fragmentation of the core of tissue usually indicates cirrhosis.[1,2] Pigmentation should be noted.

Indications and contraindications

Indications for biopsy of the liver are familiar to most clinicians and have been thoroughly discussed in other publications. The technic is particularly effective in establishing the diagnosis of hepatitis, fatty liver, cirrhosis, and malignant disease. Biopsy is also useful in excluding hepatic disease in the presence of apparent hepatomegaly, in excluding hepatic disease in the presence of abnormal "liver function tests," in the distinction between medical and surgical jaundice, in observing the natural course of liver disease and evaluating effectiveness of therapy, in the diagnosis of granulomatous disease including tuberculosis, and in elucidating the cause of hepatomegaly.[1]

Contraindications include the presence of

*Department of Medicine, Western Montana Clinic, Missoula, Montana. Dr. Wilson's present address is City of Hope Medical Center, Duarte, California.

**The Menghini needle may be ordered from surgical supply firms in the United States or directly from Italy: Societa Italiano, "ICO" S.p.A., P. O. Box 333, Bologna, Italy.

a bleeding diathesis and high grade obstructive jaundice.[1] Fatal post-biopsy bleeding has been reported infrequently and represents the greatest hazard of the technic.[1, 3, 4] Bile peritonitis has also been reported in the presence of high grade obstruction of the biliary tract. Pleural shock has also been reported and was seen in one of our patients, but it is almost always reversible. Other complications reported include pain, pneumothorax, pulmonary embolism and penetration of abdominal viscera.[1, 3] Prothrombin time is routinely obtained and biopsy is not done if prothrombin time is greater than 18 seconds with a control of 12-13 seconds. The risk of bleeding from any cause must be assessed.

Results

The authors biopsied a total of 39 patients during a three-year period beginning in 1964. In addition, case histories and biopsy tissue of nine additional cases during the same period were made available by three associates. Several patients were biopsied on two occasions. In a number of other patients two cores of liver tissue were obtained from two biopsy sites at the same sitting. All specimens were examined by a pathologist. All biopsies were obtained by the Menghini needle.

DIAGNOSIS BY NEEDLE OF 48 PATIENTS

Portal cirrhosis	3
Biliary cirrhosis	1
Fatty liver	1
Melanoma	2
Carcinoma	7
Lymphoma	1
Undifferentiated malignancy	1
Subacute or chronic hepatitis	3
Acute hepatitis	3
Obstructive jaundice	1
Increased iron stores	1
Nonspecific changes or nondiagnostic	9
Normal	13
Inadequate or unsatisfactory specimen	2

No deaths or serious complications were encountered. One patient bled intraperitoneally and required two units of blood. Metastatic carcinoma was present in the biopsy specimen. One episode of transient pleural shock was encountered, and one patient developed hemoptysis which was self-limited. Known malignancy was missed in one case. The diagnosis of metastatic carcinoma from the stomach was established at laparotomy subsequent to biopsy. In another case anaplastic malignancy was found in a second liver biopsy one week after the first biopsy which had revealed only normal liver tissue. In at least two other cases of double biopsy, one of the cores of tissue was normal, the other revealed carcinoma.

A single biopsy demonstrated metastatic cancer in patients proved to have hepatic metastasis in about 65 per cent with a range of 47 to 91 per cent in seven reported series.[5] The yield increases when the liver is palpably enlarged. Conn and Yesner[5] found that there was no significant difference in the per cent of positive biopsies between the lateral transthoracic and infracostal approaches, however, the addition of the second biopsy increased the yield from 47 to 58 per cent.

Summary

Needle biopsy of the liver by Menghini needle has been described and has been found to be a useful tool in establishing diagnosis of liver disease with a minimum risk. The results of biopsies of 48 patients have been reported. In 24 of the cases a definite diagnosis of significant disease was made. No fatalities occurred. The advantage of this technic is the low incidence of complications due to use of a needle of small bore and to the short time required for the needle to be in the liver. •

ACKNOWLEDGEMENT

The authors are grateful to the following physicians for supplying information and biopsy specimens on their patients: Bryce Breitenstein, M.D., Allen Wiseley, M.D., and James Gouaux, M.D., all of Missoula, Montana.

E. G. Buchanan, M.D., or B. J. McLaverty, M.D., pathologists, St. Patrick Hospital, Missoula, Montana, examined all specimens.

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—Program—

Eighty-Fifth Annual Meeting

NEW MEXICO MEDICAL SOCIETY

May 18-20, 1967

Santa Fe, New Mexico

WEDNESDAY, MAY 17

La Fonda Hotel

2:00 p.m. Council Meeting

7:00 p.m. Council Dinner

THURSDAY, MAY 18

ORIENTATION COURSE FOR NEW MEMBERS

9:00 a.m. "You, too, May Be President of New Mexico Medical Society"
TOM L. CARR, M.D., President, NMMS

9:30 a.m. "How Did You Arrive at Usual and Customary Fees?"
JOHN J. CORCORAN, JR., M.D., Chairman, Fee Committee, NMMS

10:00 a.m. "1967 Medical-Legal Decisions"
JACKSON G. AKIN, LL.B., Chairman, New Mexico Bar Association's Committee to Correlate Mutual Problems with the Medical Society

10:50 a.m. "Forms, Forms, Forms—38-24-36?"
STUART W. ADLER, M.D., Past President (1956), NMMS and Medical Consultant to Blue Shield

11:20 a.m. "Non-Medical Practice of Medicine"
HUGH B. WOODWARD, M.D., Speaker, House of Delegates

11:40 a.m. "Continuing Medical Education"
ROBERT S. STONE, M.D., University of New Mexico School of Medicine

12:15 p.m. Luncheon Program: "To Be Ethical Is More"
EDWIN J. HOLMAN, LL.B., Secretary, AMA Judicial Council

2:00 p.m. First House of Delegates Meeting

3:30 p.m. Reference Committee Meetings

7:00 p.m. Cocktails—Dutch-treat

8:00 p.m. New Mexico Medical Political Action Committee Banquet

FRIDAY, MAY 19

8:30 a.m. Opening Ceremonies
Presiding: ROBERT P. BEAUDETTE, M.D., Immediate Past-President
Welcome: JAMES L. MCCRORY, M.D., President, Santa Fe County Medical Society
Presidential Address: "Medicine Is Changing—Are You?"
TOM L. CARR, M.D., President, NMMS

FIRST CLINICAL SESSION

Presiding: TOM L. CARR, M.D., President

9:00 a.m. "Alcohol and Heart Disease"
MARTIN BRANDFONBRENER, M.D., University of New Mexico School of Medicine

9:35 a.m. "Use of Diuretics and Digitalis in the Treatment of Congestive Heart Failure"
GEORGE E. BURCH, M.D., Tulane University School of Medicine

10:10 a.m. "The Evaluation of the Anuric Patient"
SOLOMON PAPPER, M.D., University of New Mexico School of Medicine

11:15 a.m. "Management of Coronary Occlusion"
GEORGE E. BURCH, M.D.

11:45 a.m. Questions and Answers

—Guest Speakers—

George E. Burch, M.D.
Tulane University
School of Medicine

Karlis Adamsons, M.D.
Columbia University
College of Physicians
and Surgeons

Eli Gold, M.D.
Western Reserve
University

William H. Gordon, M.D.
Physician-Author
Lubbock, Texas

Charles Smart, M.D.
University of Utah
School of Medicine

SECOND CLINICAL SESSION

Presiding: EMMIT M. JENNINGS, M.D., President-Elect

2:00 p.m. "Evaluation of Children With Murmurs"
ROBERT F. CASTLE, M.D., University of New Mexico School of Medicine

2:35 p.m. "Diagnosis and Treatment of Prenatal Disorders"
KARLIS ADAMSONS, M.D., Columbia University College of Physicians and Surgeons

3:05 p.m. "Hospital Staphylococcus"
EDWARD MORTIMER, M.D., University of New Mexico School of Medicine

4:00 p.m. "The Herpetic Diseases"
ELI GOLD, M.D., Western Reserve University

7:00 p.m. Cocktails—Dutch-treat

8:00 p.m. Presidential Banquet
Presiding: ROBERT P. BEAUDETTE, M.D., Immediate Past-President

Honoring: Members who have practiced over 50 years and Tom L. Carr, M.D., retiring President

"The Path of Medical Discovery"
WILLIAM H. GORDON, M.D., Lubbock, Texas
(Dancing following banquet)

SATURDAY, MAY 20

THIRD CLINICAL SESSION

Presiding: EARL B. FLANAGAN, M.D., Vice President

9:00 a.m. "Renal Function Studies in Surgical Diseases"
IAN C. S. KNIGHT, M.D., University of New Mexico School of Medicine

9:35 a.m. "Electrolyte Abnormalities in Clinical Practice"
CHARLES SMART, M.D., University of Utah School of Medicine

10:05 a.m. "Head Injuries"
MICHAEL PALLAY, M.D., University of New Mexico School of Medicine

11:15 a.m. "Useful Cancer Chemotherapy"
CHARLES SMART, M.D.

SATURDAY AFTERNOON, MAY 20, 1:00-3:00

WORKSHOP ON ELECTROCARDIOLOGY

Conducted by:
GEORGE E. BURCH, M.D., New Orleans
MARTIN BRANDFONBRENER, M.D., Albuquerque

This course will deal with twenty-seven interesting cases for in-depth study

WORKSHOP ON CURRENT USES OF BLOOD AND BLOOD FRACTIONS

Conducted by:
WILLIAM R. HARDY, M.D.
ERNEST SIMON, M.D.
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University of New Mexico School of Medicine

Limited enrollment of 25 physicians for each course. $10.00 enrollment fee.

2 hours, Category 1, AAGP credits available.

You must make advance reservations to take either of these courses and checks must be made payable to New Mexico Medical Society.

3:00 p.m. Second House of Delegates Meeting

6:00 p.m.—SPECIALTY SOCIETY MEETINGS

Commercial firms financially supporting this meeting of the New Mexico Medical Society are:

ABBOTT LABORATORIES
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Speakers from

UNIVERSITY OF NEW MEXICO SCHOOL OF MEDICINE

Martin Brandfonbrener, M.D.
Associate Professor of Medicine

Solomon Papper, M.D.
Professor and Chairman, Dept. of Medicine

Robert F. Castle, M.D.
Associate Professor of Pediatrics

Edward Mortimer, M.D.
Professor and Chairman, Dept. of Pediatrics

Ian C. S. Knight, M.D.
Assistant Professor of Surgery

Michael Pollay, M.D.
Assistant Professor of Surgery

Abstract of Minutes*
House of Delegates of
The Colorado Medical Society

32nd COLORADO WINTER CLINICS
February 28-March 3, 1967

The House held two meetings at its 32nd Winter Clinics Session at the Brown Palace Hotel in Denver. Speaker M. L. Gibson and Vice-Speaker John Wood alternated in presiding throughout.

FIRST MEETING
Tuesday, February 28, 1967

The House was called to order by Speaker Gibson at 9:00 a.m. Dr. Abraham Kauvar, member of the Committee on Medicine and Religion, delivered the Invocation:

> OUR FATHER WHO ART IN HEAVEN, we are gathered here in convocation to discuss our destiny as physicians. May it be with thy help and inspiration to do the best that is within us. There are times, O Lord, that we ask if thy light is still shining and there are some amongst us who question if the Lord above still exists. Allow us to understand, that although we sometimes doubt and wonder, rather should we say with the Psalmist—YEHUDA HA LEVI:
>
> "Oh Lord, where shall I find Thee?
> All hidden and exalted is thy place;
> And where shall I not find Thee?
> Full of thy glory is the infinite space.
> Longing I sought thy presence
> Lord, with my whole heart did I call and pray,
> And going out toward Thee,
> I found Thee coming to me on the way."
>
> Teach us that as long as thy spirit hovers over the universe and guides our judgment, we can but do our mortal best. In Thy name, we ask these things. AMEN

President Myron C. Waddell led the House in the Pledge of Allegiance. Dr. Terry J. Gromer, Sergeant-at-Arms, reported 101 Delegates present, including substitute Alternates accredited by the Credentials Committee. (See detailed roll call at the end of these minutes.)

President Waddell and Speaker Gibson presented honored guests, Dr. John Conger, Dean of University of Colorado School of Medicine, and Arthur W. Seeds, A.M.A. Field Service Division.

Vice-Speaker Wood introduced Dr. Matthew Gibson, who delivered the opening address to the House and stressed the importance of the combined efforts of Colorado Medical Society members to "promote the science and the art of Medicine and to work for the betterment of public health." Dr. Gibson also announced the appointment of Dr. William Takahashi to the Reference Committee on Constitution, By-Laws and Credentials.

Secretary Donald Derry reviewed changes in the Handbook format. Minutes of the Annual Session meeting were approved as published in the December, 1966 issue of the Rocky Mountain Medical Journal.

Reports of officers, Boards, Councils and Committees were received as published in the official Handbook and were referred to the indicated Reference Committees. A short verbal report on the Clinical Meeting of the A.M.A. House of Delegates held in Las Vegas was given by Drs. Harlan E. McClure, Gatewood C. Milligan and Irvin E. Hendryson. Dr. Harry Hughes, President of Colorado Medical Service, presented his annual report. Resolutions 1 through 6 were introduced by component societies and referred to appropriate reference committees. Actions of the House on reports and resolutions will be detailed in the minutes of the second meeting.

The following physicians were elected as members of the **Nominating Committee:** Drs. Carlton Dean, Denver; Vernon L. Bolton, Colorado Springs; Alan Bortz, Littleton; Byron Yost, Longmont; Joseph Friedland, Denver; Vernon Price, Steamboat Springs; and Robert O'Dell, Aurora.

SECOND MEETING
Friday, March 3, 1967

The House was called to order at 9:30 a.m. by Speaker Gibson. Ninety-six Delegates answered the roll call, including substitute Alternates credited by the Credentials Committee. (See detailed roll call at the end of these minutes.) Reading of the minutes of the first meeting was dispensed with on motion.

DEFINITIVE ACTIONS

Reports of Reference Committees were presented, with actions by the House as follows:

Reference Committee on Board of Trustees and Executive Office

Approved **Board of Trustees Report A,** "Progress Report," and **Report A of the Executive Secretary,** "Semiannual Report," as carried in the Handbook.

Reference Committee on Legislation and Public Relations

Approved **Report B of Board of Trustees, "Billing Procedures Under PL 89-97"** in its entirety.

Approved amended **Report C of the Board of Trustees, "Remuneration for Service on Utilization Review Committees,"** substituting the following for the last three paragraphs of this report:

> "It is recommended that the Colorado Medical Society adopt a policy wherever possible, that physicians **not** be compensated for serving on Utilization Review Committees for Extended Care Facilities. However, it is felt that situations will develop in small communities where remuneration for service and time involved in serving on Utilization Review Committees will be necessary. Therefore, we would advise the component medical societies to work this out on a local level. In adopting this policy, we feel that voluntary Utilization Review Committees will be able to retain their independence in serving without pay and an individual is not subject to the dictates of such facilities who are paying for such services."

Approved unanimously and in its entirety

* All amended reports, supplemental and verbal reports, Reference Committee Reports and Resolutions are on file with the Secretary of each Component Society, or copies may be obtained upon request from the Executive Office. A complete digest of actions of the House was carried in the March 31, 1967, issue of Colorado Medicine.

Report E of the **Board of Trustees, "Physician's Office as the Center of Medical Care."**

Approved unanimously **Report F** of the **Board of Trustees, "Physician's Fee Index Survey,"** as printed in the Handbook.

Approved **Report L** of the **Board of Trustees,** "Result of **Meeting with Hospital Association."**

Approved **Report A** of the **Council on Interprofessional Relations,** with special commendation to the Committee on Nursing Affairs for its thorough review of the Licensed Practical Nurses Act and current legislation to be presented to the Legislature.

Approved **Report A, Council on Legislation, "Legislative Activities."**

Approved **Report D** of the **Council on Legislation** except the paragraph dealing with **H.B. 1266.** The Reference Committee completely opposed this bill on the basis that it would by-pass the Medical Practice and Basic Science Acts and that the circumstance it covers is peculiar to a problem existing in Denver; therefore, it should be solved by the City and County of Denver and not by legislation. The House, recognizing the demands of political expediency, reaffirmed its support of the Council on Legislation in both its past and future actions.

Approved **Report A** of the **Council on Medical Service, "Free Choice of Licensed Physicians in Care of Government Sponsored Programs, not Excluding Crippled Children."**

Approved **Report C** of the **Council on Medical Service, "Revision of Colorado Relative Value Study."**

Approved **Report D** of the **Council on Medical Service, "Position Paper—Title XIX,"** as published.

Approved **Report H** of the **Council on Medical Service,** "State Welfare Department Affairs Committee — **Over-the-Counter and Psychotropic Drugs."**

Approved **Report I** of the **Council on Medical Service,** "State Welfare Department Affairs—**Implementation of Title XIX,"** as printed in the Handbook.

Approved **Report C** of the **Council on Public Health,** "Incarceration and Treatment Centers for **Chronic Alcoholic Drivers."**

Approved **Report E** of the **Council on Public Health, "Fee Schedule."**

Approved **Report F** of the **Council on Public Health, "Mental Health Legislation."**

Disapproved **Resolution No. 1, "Direct Billing,"** as presented by Boulder County Medical Society, since amendments to the Social Security Act are necessary in order to obtain direct billing under Title XIX, and it would seem that this could best be accomplished through efforts of individual physicians who take time to inform their congressmen of their desire for such amendments.

Disapproved **Resolution No. 2, "Usual and Customary Fee Survey,"** without comment.

Disapproved **Resolution No. 3, "Utilization of Nursing Homes and Extended Care Facilities,"** presented by the Boulder County Medical Society, with the suggestion that component societies work with State Society's Utilization Review Committee in establishing guidelines.

Approved Amended **Resolution No. 4, "United Mine Workers,"** presented by the Boulder County Medical Society, instructing that the words, "a closed panel and an approved carrier" in the first paragraph be deleted. The remainder of the resolution is unchanged.

Disapproved **Resolution No. 5, "Welfare Department Drug Program,"** presented by the El Paso County Medical Society. House feels that Councils and Committees are alert to these problems and that the situation is being closely monitored and the Welfare Department has also assured that problems with the program will be worked out.

Reference Committee on Insurance and Prepayment Plans

Approved **Preliminary Report D, "Creation of a Council on Medical Payments,"** with the following amendments:

Page 1—New section to be inserted in Constitution and By-Laws to read as follows:

"Section 10, Council on Medical Payments: Council to consist of 8 members (to be consistent with the present Council system) with each Committee's being represented by at least one member on the Council."

Amend page 2, paragraph 1, to read:

"Committee on Fees: Duties to **interpret reasonableness of** medical fees on the basis of a study of entire fee structure of community, state, and nation. Suggest subcommittees on Fee Surveys, Relative Value Scale and Cost of Living."

Substitute the following for paragraph 2 on page 2:

"Committee on Government Insurance: Duties—to promote CMS fee concepts in all fee relations of physicians with government, its carriers or fiscal intermediaries. To mediate disagreements regarding fees between physicians and government, its carriers or fiscal intermediaries, as feasible. When relative to a specific problem, to advise physicians, carriers, and related persons and agencies of reasonableness of fees."

Delete the last two paragraphs on page 2 and substitute the following sentence:

"This necessary change shall be referred to the Organizational Study Committee for development of the required amendments."

Approved the **Supplement to Preliminary Report D,** with the following amendment. Delete paragraph 3, page 1 and substitute the following paragraph:

"Since creation of new Council cannot take effect until September, 1968, and since urgency of adoption of a plan of unified direction for all problems relating to fees was expressed in the Minority Report, a method of operation prior to 1968 is recommended. Next September (1967) the By-Laws shall be amended to remove from the appropriate sections (primarily Council on Medical Service) all language giving any existing Administrative Council jurisdiction over policies related to medical fees, thereby leaving creation and supervision of any and all such subjects to the Board of Trustees. Amendment of the By-Laws can be accomplished in one Annual Session. It is now further recommended that the Board of Trustees create a committee structure essentially the same as the proposed new Council and to serve with provisional prerogatives of the proposed 'Council on Medical Payments' —until formalized by Constitution and By-Law changes."

With this paragraph inserted, the final three paragraphs of Supplement to Preliminary Report D become informational only.

Approved **Substitute Report D, "Creation of a Council on Medical Payments"** with special commendation to Mr. Harvey Sethman as to its historical value.

Approved **Report G of Council on Medical Service, "Annual Report of Senior Representative to Blue Cross."**

Approved **Report A** from the **President of Colorado Medical Service, Inc.** (Blue Shield), entitled "Annual Report—February 28, 1967."

Approved **Report J** of **Council on Medical Service, "Report of Blue Shield Advisory Committee,"** and endorses the proposed request to discontinue the active offering of Standard A Plan and study for the development of a new plan, giving due consideration to the adoption of the "usual and customary" concept as the basis for determining payments for professional services.

Reference Committee on Professional Relations

Approved **Board of Trustees Reports G, "Committee on Project Viet Nam"; H, "Health Careers Council"**; and **J, "Utilization of Retired Physicians and Inactive Nurses."**

Approved **Report A** of the **Judicial Council,** "Progress Report," and **Report A** of the **Grievance Committee,** "Progress Report."

Approved the Handbook **Reports A, B and C** of the **American Medical Association delegation.**

Approved as amended, **Report B** of the **Council on Interprofessional Relations,** "Progress Report," with the addition of a fourth clause in the second paragraph, as follows:

> "4. The 'Medicolegal Screening Panel' which is now functioning in the Metropolitan area is working admirably well. Representatives from the medical and bar professions have enthusiastically endorsed this approach. It is recommended that this Panel be expanded on a state-wide basis."

Approved **Report B** of the **Council on Legislation, "Legislative Forums,"** and **Report C** of the **Council on Legislation, "Dental School."**

Approved **Report E** of the **Council on Medical Service, "Rules and Regulations for Medical Staffs of Small Hospitals,"** and **Report F** of the **Council on Medical Service, "Standards for Hospital and Medical Facilities."**

Approved **Report A** of the **Committee on Nursing Affairs,** "Progress Report," endorsing advantages of local medical participation in problems and seminars for nurses.

Approved Progress **Report A** of the **Interorganizational Advisory Council** and recommended its continuation as a source of communication and liaison between the groups involved and the appropriate committees of the Colorado Medical Society. Requested Board of Trustees to re-evaluate Medical Society's role in this Council.

Approved **Report B** of the **Organizational Study Committee, "Dates Elected Officers of Component Societies Assume Office,"** and endorsed recommendation that component societies amend their by-laws to allow for assumption of office uniformly in September or October of each calendar year.

Reference Committee on Scientific Work

Endorsed **Report D** of the **Council on Public Health, "Scientific Meetings,"** recommending that State Society procure speakers on subjects of rehabilitation and air and water pollution problems for the Annual Meeting and that State Society cosponsor the Rocky Mountain Academy of Industrial Medicine annual meetings on industrial medicine rather than conducting a separate annual meeting on industrial medicine.

Approved Progress **Report A** of the **Council on Scientific Education** as carried in the Handbook and endorsed the dates of July 14 and 15, 1967 for the Rocky Mountain Cancer Conference to be held at the Brown Palace Hotel, Denver.

Approved **Report C** of the **Council on Scientific Education, "State Society Meetings,"** and endorsed Committee's suggestion to study plans for future meetings in an effort to improve attendance, but urged careful consideration of available space for delegate housing as well as scientific and technical exhibits.

Approved **Report D** of the **Council on Scientific Education, "Millis Report,"** and recommended appointment of an ad hoc committee to implement gathering and dissemination of Millis Report and formulate a policy that delegates can take to June American Medical Association meeting.

Approved enthusiastically **Council on Scientific Education Report E, "Sponsors for Medical Students,"** which recommends that individual physicians sponsor one medical student in his junior year and introduce him to the private practice of medicine.

Reference Committee on Public Health

Approved **Council on Medical Service Report B, "American National Red Cross** is an Instrumentality of the Federal Government," as published in the Handbook.

Approved **Report A** of the **Council on Public Health,** "Progress Report," with the following amendments:

Page 1, paragraph 3, **"Environmental Health and Rehabilitation Committee,"** approved as noted in Handbook, but quoted paragraph is amended to read:

> "The Council on Public Health of the Colorado Medical Society wishes to emphasize that in modern society no surface water can be considered safe to drink unless it has been properly treated and distributed."

The remainder of the paragraph is to be deleted.

Page 2, paragraph 3, **"Maternal and Child Health Committee,"** approved, with following addition after the second sentence:

> "The follow-up reporting on Perinatal Mortality from local hospitals and medical societies has been extremely disappointing. The Perinatal Mortality report forms are not being completed by the attending physicians and are not being returned to the State Perinatal Mortality Committee. Without all of the complete forms no conclusion and henceforth no recommendation can be made by this committee. We strongly urge that the component medical societies, the Rocky Mountain Pediatric Society, the Colorado Academy of General Practice, and the Colorado Ob-Gyn Association press their members to complete and return these forms as previously requested."

There is no change in the remainder of the paragraph.

Approved **Report B** of **Council on Public Health,**

"Augmented Program of Driver Training" and endorsed suggestions submitted for better driver training.

Approved Amended **Report B** of the **Council on Scientific Education, "Statewide Papanicalaou Smear Program,"** deleting the last four sentences of the report and amending as follows:

"The Colorado Division of Public Health will offer the services of its local health officers and nurses, when requested by local societies. The Colorado Society of Clinical Pathologists has offered the services of its members for the interpretation of all Papanicalaou Smears that are done without charge by the attending physician. The facilities of local hospitals and health units will be available at the request of component societies."

Disapproved **Resolution 6** co-sponsored by the Clear Creek, Adams-Aurora and Weld County Medical Societies, **"Encroachment of the Public Health Department into the Private Practice of Medicine."** Reference committee reported that in a meeting with committee members, representatives of Department of Public Health stated there is no imminent danger of a measles epidemic and it was the desire of that department that a measles immunization program should not be made a public program, but rather an educational effort with immunizations carried out in the private physician's office utilizing the brand of vaccine he prefers. The Papanicalaou Smear Program was approved in a previous section of the report for the Reference Committee on Public Health.

Reference Committee on Constitution, By-Laws and Credentials

Approved **Report A** of the **Organizational Study Committee** entitled "Progress Report," as reported in the Handbook and which recommends increasing the size of the Board of Trustees by two.

Reference Committee on Miscellaneous Business

Approved **Report I** of the **Board of Trustees, "Colorado Centennial,"** with suggestions for early planning for the Colorado Medical Society's Centennial Year.

Approved **Report K** of the **Board of Trustees, "Public Relations Committee—Amigos de las Americas,"** as reported in the Handbook.

HOUSE OF DELEGATES ROLL CALL
COLORADO WINTER CLINICS, FEB. 28-MARCH 3, 1967

Component Society	Delegates	Alternates
Adams County-Aurora	O'Dell, Robert (1)(2)	Joseph, Norman
	Palmieri, Anthony (1)(2)	Censonsky, H. Sol
Arapahoe	Bortz, Alan (2)	Hughes, Clarence
	Brittain, Robert	Shugart, Ralph
	Fraser, Charles (2)	Carver, Robert (1)
	Grund, Walter (1)(2)	Brinton, Thomas
	Jobe, William (2)	Melzer, Rohert (1)
Boulder	Kahn, Kenneth (1)(2)	Amoroso, Christian
	Kerkhoff, Stanley (1)(2)	Hardenberg, Firmon
	McCurdy, Robert (1)(2)	Gillett, Warren
	McFarland, Robert (1)(2)	Avery, John
	Takahashi, William (1)(2)	Strenge, Henry
	Yost, Byron (1)(2)	Wherry, Harry
Chaffee	Leonardi, Leo (1)	McNamara, B. E.
Clear Creek Valley	Ansley, Robert (1)(2)	Markham, Allen
	Dean, Carlton (1)	Bridgeman, John (2)
	Doyle, John (1)	Carpenter, David (2)
	Driver, Thomas (1)(2)	Walker, H. B.
	Durham, Morgan (1)(2)	Eaton, Wyley
	Maruyama, Herbert (1)	Traylor, Frank (2)
	Sadler, Dean (1)(2)	Haynes, Robert
	Sontag, Stanley (1)(2)	Chamberlin, John
	Wotkyns, Roger (1)(2)	Gjellum, George
Delta	Bennett, Robert	Hick, L. L.
Denver	Amesse, John (1)(2)	Kempe, C. Henry
	Atkins, Dale (1)(2)	Tucker, Warren
	Badger, E. Bruce (1)(2)	Williams, Ben
	Blandford, Sidney (1)(2)	Tyler, Monroe
	Bosworth, Robert (1)(2)	Appelbaum, Jerry
	Bramley, Howard (1)(2)	Reimers, Wilbur
	Buchtel, Henry	Fisher, H. Calvin
	Butterfield, Joseph (1)(2)	Sawyer, Kenneth, Jr.
	Chisholm, R. Neil (1)(2)	Freedman, Marshall
	Clarke, J. Philip (1)(2)	Edwards, John
	Condon, William (1)(2)	Roessing, Lawrence
	Coppinger, William (1)(2)	Pear, Bertram
	Covode, William	Lasater, Gene (1)(2)
	Earley, Thomas (1)(2)	Blanchet, David
	Eisele, C. Wesley (1)(2)	Johnson, Melvin
	Elliott, Robert (1)(2)	Coleman, Thomas
	Frangos, Pete (1)(2)	Hoch, Peter
	Freed, Charles G.	Sawyer, Robert (1)(2)
	Friedland, Joseph (1)(2)	Zarlengo, Roland
	Gromer, Terry (1)(2)	Brock, L. Loring
	Hamilton, Paul (2)	Alexander, C. Houston
		Dafoe, Charles* (1)
	Isbell, N. Paul (1)(2)	Ashe, S. M. Prather
	Kovarik, Joseph (1)(2)	Baker, William
	Lewis, Henry M.	Anderson, Martin (1)
	Liggett, Robert (1)(2)	Githens, John
	Lipscomb, William (1)(2)	Bronson, Howard
	Livingston, Wallace (1)(2)	Rademacher, Raymond
	Longwell, Freeman (1)(2)	Hermann, Gilbert
	Mahony, Thomas (1)(2)	Cotton, Ralph
	McCurdy, Robert (1)(2)	Benedict, Daniel
	McGlone, Frank	Gipson, Bernard (1)(2)
	Meiklejohn, Gordon (1)(2)	Dafoe, Charles
	Mitchell, Roger	Blackwood, Charles (1)
	Nelson, John (1)(2)	Bouslog, John
	Perkins, James (1)(2)	Massa, Emil
	Philpott, James Jr. (1)	List, James
	Philpott, Osgoode, Jr. (1)(2)	Talbott, Richard
	Rothenberg, Herbert	Kukral, Albert
		Benedict, Daniel* (1)
	Stanfield, Clyde (1)(2)	Curry, Marcia
	Strain, James (1)(2)	Campbell, Horace
	Toll, Henry	Wherry, Franklin (2)
		Talbott, Richard* (1)
	Tyner, George (1)(2)	Harvey, Richard
	Virtue, Robert (1)(2)	Becker, Harold
	Wilson, William	Kaplan, Max (2)
		Curry, Marcia* (1)
Eastern	Ross, C. L.	Straub, John (1)(2)
El Paso	Bolton, Vernon (1)(2)	Lovell, Kenneth
	Crawford, Lewis (1)(2)	Larimer, Craig
	Donald, James (1)(2)	O'Donnell, James
	Hays, John (1)(2)	Presti, Matthew
	King, Otis (1)(2)	Worlton, James
	Liddle, E. B. (1)(2)	Roesler, Paul
	Paap, Jack (1)(2)	Ryder, William
	Pierce, Alson (1)(2)	Edwards, James
	Wiggins, Milton (1)(2)	Stafford, Robert
Fremont	Miller, Howard (1)(2)	Christie, George
Garfield	Hendrick, Harry	Mueller, Edward
Huerfano	Merritt, William	Lamme, James Jr. (1)
Lake	Stanley, George (1)(2)	Surges, Lloyd
La Plata	Murray, Menard (1)(2)	Swanson, Robert
Larimer	Anderson, William (1)(2)	
	Codd, Richard (1)(2)	Murray, Douglas
	Hansen, Richard (1)(2)	Unfug, Harry
	Robertson, Ian (1)(2)	
Las Animas	Donnelly, James	Vialpando, A. B.
Mesa	Huskey, Harlan (1)(2)	Wilson, Charles
	Linnemeyer, R. E. (1)(2)	Parker, J. James
	Troy, Richard (1)(2)	Rigg, James P.
Montelores	Gardner, Vincent (2)	Merritt, Edward
		Donesky, Paul* (1)
Montrose	Greenwood, Richard	Balderston, George (2)
Morgan	Mellinger, William (1)(2)	Woodward, Paul
Northeast	Brehm, Gill (1)(2)	Mackey, Jack
	Manganaro, Carl (1)(2)	Carter, Billy

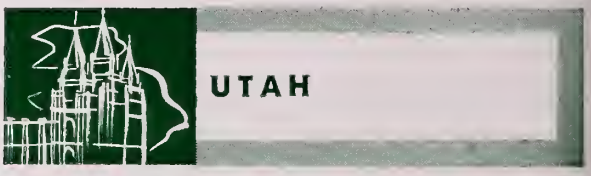
Component Society	Delegates	Alternates
Northwestern	Price, Vernon (1) (2)	Crawford, M. L.
Otero	Sisson, William	Sampson, Lloyd
Prowers	Likes, Edwin (1) (2)	Blease, E. B.
Pueblo	Beckwith, Richard (2)	Braukman, Ernest
	Childers, Stanley (1) (2)	Tice, Frederick
	Farahaugh, Leonard (1) (2)	Hurley, Grant
	McKinnon, George	Staats, R. E. (1) (2)
	Swartz, Carl (1) (2)	Capek, Richard
	Vickery, Don (1) (2)	Hopkins, William
San Luis Valley	Rechnitz, Fred (1) (2)	Bradshaw, Robert
	Anderson, V. V.	Cassidy, Charles (1) (2)
Washington-Yuma	Waski, A. T.	Good, Gilbert
Weld	Allely, Donald (1) (2)	Cook, Donald
	Kadluh, Edwin (1) (2)	Bates, David
	Shore, Roy	Wolach, Bernerd
		Cook, Donald* (1)
	Weaver, Phillip (1)	Miller, Burdette (2)

*Indicates appointed substitute Alternate in absence of both elected Delegate and Alternate.

Physicians in the News

John T. Hurly, M.D., Billings, has been appointed a member of the Montana State Board of Medical Examiners by Governor Babcock for the term ending February, 1974. Doctor Hurly succeeds H. D. Rossiter, M.D., Sheridan, who completed a seven-year term as a member of the State Board of Medical Examiners during February, 1967. . . . Colvin H. Agnew, M.D., Billings, has been elected president of the Yellowstone County Tuberculosis Association; David K. Drill, M.D., Billings, was re-elected a member of its Board of Directors. . . . Bob E. Hulit, M.D., Billings, has been named chairman of the Fifty Million Fund Campaign in the Synod of the Rockies of the United Presbyterian Church.

Marcus Smith, M.D., New Mexico Scientific Editor of our Rocky Mountain Medical Journal, is herewith extending an invitation to any member to prepare a scientific article for publication in the SEPTEMBER issue, which is the NEW MEXICO issue of this Journal. Articles should be forwarded to Dr. Smith by July 1.



USMA Briefs

Dr. Thomas L. Hannum, Brigham City physician and surgeon, volunteered his services to the "Volunteer Physicians for Vietnam" project. Under this program, physicians may volunteer, through the A.M.A., for a 60-day period of voluntary service to the people of Vietnam. Dr. Hannum departed for Vietnam on March 31, 1967; his period of service will extend from April 3 to June 1.

* * * *

A plaque, memorializing four doctors who perished in a plane crash 15 months ago, was placed in the new pediatrics section of the Cottonwood Hospital. Named on the plaque are: Dr. J. Bernard Critchfield, Dr. Marion E. Probert, Dr. Roger W. Parkinson, and Dr. Antoine A. Dalton. Inscribed on the plaque are these words: "The leadership of these physicians in assistance to their fellow men and to the growth of the Cottonwood Hospital will always be remembered." The four perished in a plane crash while on their way to Albuquerque.

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OBITUARIES

Colorado

Dr. Harry Clarence Bryan was stricken with a massive cerebral hemorrhage on Friday afternoon, March 17, 1967, aboard the luxury liner, S.S. Brasil, near Suez. He died the next day, Saturday, March 18, in the Red Crescent Hospital in Suez. He was 73 years old at the time of his death. Dr. Bryan and his wife left Colorado Springs on February 5 for a cruise down the east coast of South America and up the west coast of Africa and then into the Mediterranean. They had planned to return home on April 15.

Dr. Bryan was born in Greer County, Oklahoma, December 24, 1893, the son of Eugene F. and Alice Jefferson Bryan. He received his primary and secondary education in the public schools of Texas. He started his college work at Clarendon College in Texas in 1911, but transferred to the University of Texas School of Pharmacy in 1913 and graduated from that institution with a Ph.G. Degree in pharmacy in 1915. Following his graduation from the University of Texas School of Pharmacy, Dr. Bryan was employed for several years by the Eli Lilly Drug Company.

He resigned his position with the drug company in 1926 to prepare for a career in medicine at the University of Southern California. Later he transferred to the pre-medical department of Colorado College in Colorado Springs. Following completion of his premedical work he entered the University of Colorado College of Medicine in the fall of 1927. He received his doctor of medicine degree from the University of Colorado in 1931. Following graduation he interned at Colorado General Hospital, and became a surgical resident at the same hospital.

He completed his residency in surgery in 1933 and then began the practice of medicine and surgery in Colorado Springs, where he remained in active practice until the time of his death.

Dr. Bryan was an active member and past president of the El Paso County Medical Society. He served as president of the Colorado Medical Society in 1951 and 1952. He was active in the civic and medical affairs of Colorado Springs and served for many years on the staff of Colorado Springs Memorial Hospital, St. Francis Hospital, and the Glockner Penrose Hospital.

He served one term as vice president of the American College of Surgeons and was a member also of the Missouri Pacific Hospital Association, the Colorado Springs Clinical Club, and the American Medical Association. He served for several years on the Board of Trustees of the Presbyterian Church, the Board of Directors of the Colorado Springs Memorial Hospital, the Board of Directors of the Rocky Mountain Rehabilitation Center, and the Board of Directors of the Colorado Division of the American Cancer Society.

He was an active member and past president of the Colorado Springs Rotary Club and the First Presbyterian Church of Colorado Springs. He was also a 32nd Degree Mason.

Dr. Bryan was married August 23, 1916, to Mary M. Dodson. He is survived by his widow and one daughter, Patricia (Mrs. Harry Waldrop) of Boulder, two grandchildren, Andra and Kathleen Waldrop, also of Boulder, and a niece, Mrs. Marshall Morin of Colorado Springs.

Montana

Sidney Alexander Cooney, M.D., Helena, Montana, died at his home in Helena, after a brief illness. Dr. Cooney was born at Canyon Ferry, Montana, September 19, 1881. He received his M.D. degree from Jefferson Medical College of Philadelphia in 1905 and immediately returned to Helena to engage in the general practice of medicine. He continued the active practice of medicine in Helena until his death, a period of 62 years. Dr. Cooney was most active in medical affairs and served for a number of years as secretary of the Lewis and Clark County Board of Health and as a member of the Advisory Committee to the secretary of the State Board of Health. In addition, he served on several occasions as acting executive officer of the State Board of Health. Dr. Cooney served as a member and as secretary of the State Board of Medical Examiners for over thirty-five years. He was a member of the Legislative Committee of the Montana Medical Association for many years and represented the physicians of Montana in the halls of the Capitol Building during many sessions of the Legislative Assembly. He also served as third vice president of this Association during 1913-14 and as its president during 1945-46. During his lifetime, innumerable accomplishments, milestones, and honors marked his years of service in medical, public health, and athletic affairs.

Utah

Dean A. Moffat, M.D., Salt Lake City allergist, died Monday, March 13, 1967, at the age of 59.

Dr. Moffat was born August 4, 1907, in Murray, Utah, the son of David W. and Sarah E. H. Moffat. Graduating from the University of Utah in 1928 with an A.B. degree, he later received his M.D. degree from the Rush Medical School in Chicago. He married Margaret Short in Murray on July 18, 1933.

Beginning his medical practice in Magna in 1935, he served as a general practitioner for eight years. He then spent two years of special study at New York Postgraduate School; Columbia University; and Johns Hopkins University, subsequently returning to Salt Lake City to practice in the specialty of allergy.

Dr. Moffat was a member of many medical organizations, which include: American Medical Association; Utah State Medical Association; Salt Lake County Medical Society; American College of Physicians; American Society of Internal Medicine; American Medical Society of Vienna; American Academy of Allergy; American College of Allergy; West Coast Allergy Society; and the International Congress of Allergy. He served as a former president of the attending staff of St. Mark's Hospital, and also as consultant in allergy at Primary Children's Hospital.

He was also a member and past president of Rock Artisans of Utah; a member of the Wasatch Gem Society of Utah; and a member of the Audubon Society.

He is survived by his widow; a son, Michael Dean Moffat, Salt Lake City; a daughter, Janet Margaret Moffat, San Antonio, Texas; and a brother, D. Howe Moffat, Salt Lake City.

* * * *

Richard S. Tanner, M.D., Salt Lake City obstetrician, and former president of the L.D.S. Southern Australian Mission, died March 16, 1967, at the age of 50.

Dr. Tanner was born July 10, 1916, in Salt Lake City, the son of William C. and Clara Sutton Tanner. He married Anna Dale Storrs in the Salt Lake L.D.S. Temple on March 3, 1939. Graduating with honors from the University of Utah in 1940 with a B.S. degree, he later received his M.D. degree from Northwestern University, and then completed postgraduate courses in obstetrics and gynecology at the Harvard, Johns Hopkins, and New York Universities. He subsequently returned to Salt Lake City, where he practiced for 13 years.

A former member of the board of directors of the American Cancer Society, Utah division, Dr. Tanner held membership in various medical organizations, and served as treasurer of the Salt Lake County Medical Society during 1957.

He held the rank of Captain in the U. S. Army medical corps from 1945 to 1947, being stationed at Fort Leavenworth, Kansas.

Dr. Tanner is survived by his widow; three sons and two duaghters, Robert S., Richard L., Michael W., Mrs. Michael J. (Merrilee) Preece, all of Salt Lake City, and Mrs. Howard R. (Deanne) Francis, Provo. Also surviving him are his mother and a brother, William C., Jr., both of South Pasadena, California.

Doctor . . . Heal Thyself

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MEETINGS

Medical Audiology

The department of Speech Pathology and Audiology, University of Montana, announced a Seminar in Medical Audiology, June 19-22 at its Missoula campus. A special two-day Workshop in Medical Audiology will be held June 23-24 at Flathead Lake.

Lectures and case demonstrations will be presented by Dr. Francis I. Catlin, Associate Professor of Otolaryngology at Johns Hopkins University School of Medicine.

Recreational and housing facilities for families are available. A limited number of reservations are available, so application should be received before May 1, 1967. Traineeships are offered by the U. S. Office of Education (PL-85-926) to qualified applicants. For further information, write: Dr. Charles Parker, Department of Speech Pathology and Audiology, University of Montana, Missoula, Montana 59801.

* * * *

Annual Otolaryngologic Assembly

The Annual Otolaryngologic Assembly of 1967 will be held October 14 through 20, 1967, in the new Illinois Eye and Ear Infirmary at the Medical Center, Chicago. The Department of Otolaryngology of the College of Medicine of the University of Illinois offers a condensed postgraduate basic and clinical program for practicing otolaryngologists under the direction of Dr. Emanual M. Skolnik. It is designed to bring to specialists current information in medical and surgical otorhinolaryngology.

A separate, but correlated course entitled "Head and Neck Radiology Conference," will be conducted by the Department of Radiology for two full days just preceding the Assembly, Thursday and Friday, October 12 and 13, 1967.

Interested physicians should direct communications to Department of Otolaryngology, P. O. Box 6998, Chicago, Illinois 60680.

* * * *

American College of Physicians Postgraduate Courses, 1967

CLINICAL APPLICATIONS OF RECENT ADVANCES IN ELECTROPHYSIOLOGY OF THE HEART

May 22-25
New York University School of Medicine and Medical Center
New York, New York

INTERNAL MEDICINE: CURRENT PHYSIOLOGICAL CONCEPTS IN DIAGNOSIS AND TREATMENT

June 12-16
University of Cincinnati College of Medicine
Cincinnati, Ohio

CLINICAL APPLICATIONS—RECENT ADVANCES IN PHARMACOLOGY

June 19-21
University of Iowa
Iowa City, Iowa

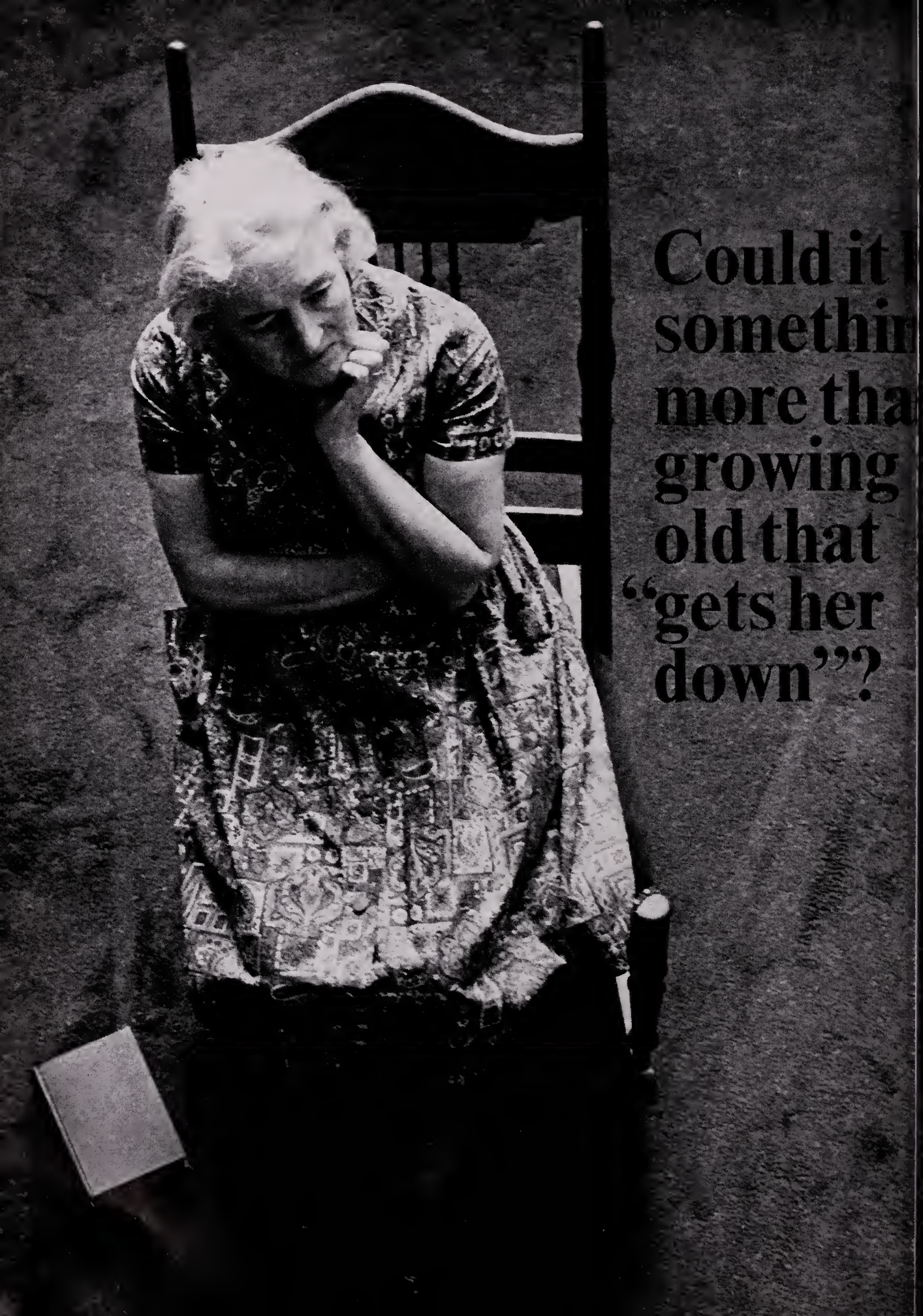
These courses are made possible by the generous cooperation of the directors and institutions involved. Tuition fees: Members, $60.00; Nonmembers, $100. Registration forms and requests for information are to be directed to: Edward C. Rosenow, Jr., M.D., F.A.C.P., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia, Pa. 19104.

Announcing . . .

the availability of the tenth guide in the series, "Guides to the Evaluation of Permanent Impairment" developed by the Committee on Rating of Mental and Physical Impairment. It is entitled: "Guides to the Evaluation of Permanent Impairment—Mental Illness."

This guide, like all the others in the series, has been designed primarily for use by physicians. The guide is, however, of interest and use to all concerned with the medical, administrative, or judicial aspects of programs for the disabled. The previously published guides in the series deal with the extremities and back; the visual system; the cardiovascular system; ear, nose, throat, and related structures; the central nervous system; the digestive system; the peripheral spinal nerves; the respiratory system; and the endocrine system.

A limited number of copies of this guide may be obtained, without charge, upon written request to the Committee on Rating of Mental and Physical Impairment, 535 North Dearborn Street, Chicago, Illinois 60610.


Could it
somethi
more tha
growing
old that
"gets her
down"?

Mild mood depression, poor appetite, little interest in the present or future. Does this picture mean that she's giving in to functional fatigue?

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Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%, pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B_1) (10 MDR*), 10 mg.; riboflavin (vitamin B_2) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B_6), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.
†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

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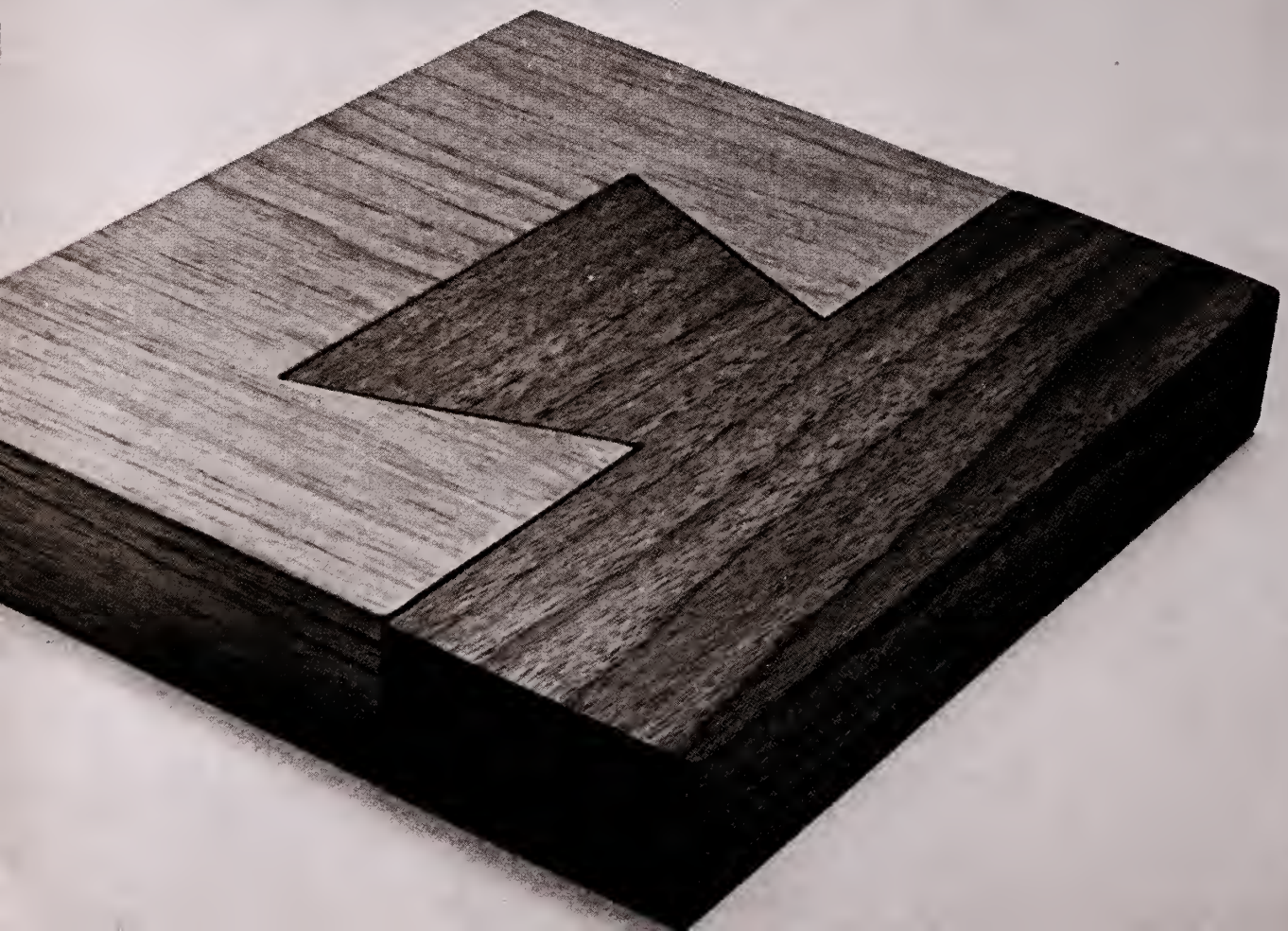

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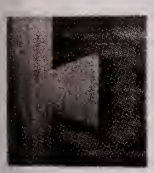
even better blood pressure reduction—because 2 antihypertensive agents of choice often work better together

One drug potentiates the antihypertensive action of the other. Blood pressure is generally controlled with relatively low dosages of each component, often resulting in minimized side effects.

Although each component alone may provide adequate therapy in many cases of mild hypertension, the combination offers advantages which cannot be achieved with single-drug therapy.



even more patient benefits—because complementary actions of 2 antihypertensive agents extend the range of advantages

Reserpine, in addition to lowering blood pressure, provides central calming action to help relieve anxiety and tension; provides bradycrotic action to slow the rapid heart.

Hydrochlorothiazide, in addition to lowering blood pressure, relieves edema; permits relaxation of salt restriction.

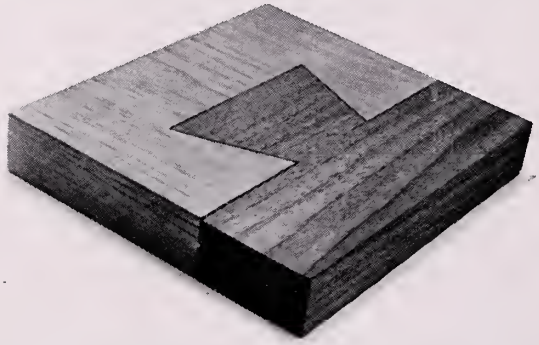
The combination provides medication in one tablet instead of two; one prescription instead of two—encourages patient adherence to the regimen, offers economy.

for your next patient with mild hypertension

Rx Serpasil-Esidrix Combination Tablets

Please see following page for prescribing information.

Serpasil®-Esidrix®
(reserpine and hydrochlorothiazide CIBA)
Combination Tablets



INDICATIONS: Mild to moderate hypertension, especially when complicated by anxiety, tachycardia, or edema.

SIDE EFFECTS AND PRECAUTIONARY MEASURES

Serpasil® (reserpine CIBA)
Occasional side effects: lassitude, drowsiness, nasal congestion, looseness of stools, increased frequency of defecation. Rare side effects: anorexia, headache, bizarre dreams, nausea, dizziness, skin rash.

Severe mental depression has appeared in a small percentage of patients, primarily in a dosage above 1 mg daily. When the drug is discontinued, depression usually disappears, but hospitalization and shock therapy are sometimes required.

Caution: Withdraw reserpine 2 weeks before surgery, if possible. For emergency surgical procedures, give vagal blocking agents parenterally to prevent or reverse hypotension and/or bradycardia.

Because reserpine may increase gastric secretion of hydrochloric acid, use cautiously in patients with peptic ulcer.

Use cautiously with digitalis, quinidine, or guanethidine. Not recommended for aortic insufficiency.

Esidrix® (hydrochlorothiazide CIBA)
Contraindictions: Oliguria, renal shutdown, progressive hepatic disease, and allergy to thiazides.

Warnings: Stenosis, hemorrhage, and ulceration of the small bowel have occurred with coated potassium tablets. Discontinue such medication when used with Esidrix if gastrointestinal disturbances arise.

Pay special attention to electrolyte balance of patients with severe renal or hepatic insufficiency. In patients with cirrhosis and ascites, watch for symptoms of impending hepatic coma. Thiazides may decrease glucose tolerance; use cautiously in diabetics. Hyperuricemia may occur but is readily reversed by a uricosuric agent. Lowering of blood pressure may sometimes result in nitrogen retention, particularly in patients with impaired renal function. Dosage titration is necessary in such patients.

Precautions: Watch for signs of fluid or electrolyte imbalance. Further electrolyte depletion may cause hypochloremic alkalosis and hypokalemia. Since the latter may precipitate digitalis intoxication, watch carefully patients who are taking digitalis or its glycosides or those with cardiac arrhythmias. In severe hypokalemia, large oral or intravenous doses of potassium may be required.

A few infants born of mothers who received thiazides during pregnancy have shown bone marrow depression with thrombocytopenia. Hydrochlorothiazide decreases responsiveness to exogenous norepinephrine and increases responsiveness to tubocurarine. Hypotensive episodes under anesthesia have been observed in some patients receiving thiazides.

Side Effects: In addition to those above, nausea, anorexia, headache, restlessness, constipation, dizziness, paresthesias, fatigue, increased sweating, cramps in arms and legs, diarrhea, abdominal pain. Rare reactions: purpura with or without thrombocytopenia, skin rash, photosensitivity, urticaria. Sometimes associated with hydrochlorothiazide: leukopenia, agranulocytosis, aplastic anemia, pancreatitis, jaundice, necrotizing vasculitis.

DOSAGE
Average dosage is 2 *Tablets #2* daily. For patients requiring less hydrochlorothiazide, substitute *Tablets #1*. For maintenance, reduce dosage to lowest effective level. When necessary, more potent antihypertensive agents may be added gradually in reduced dosages.

SUPPLIED
Tablets #2 (light orange), each containing 0.1 mg reserpine and 50 mg hydrochlorothiazide; bottles of 100 and 1000. *Tablets #1* (light orange), each containing 0.1 mg reserpine and 25 mg hydrochlorothiazide; bottles of 100 and 1000.

Consult complete literature before prescribing.

CIBA Pharmaceutical Company, Summit, N. J. C I B A

2/3595

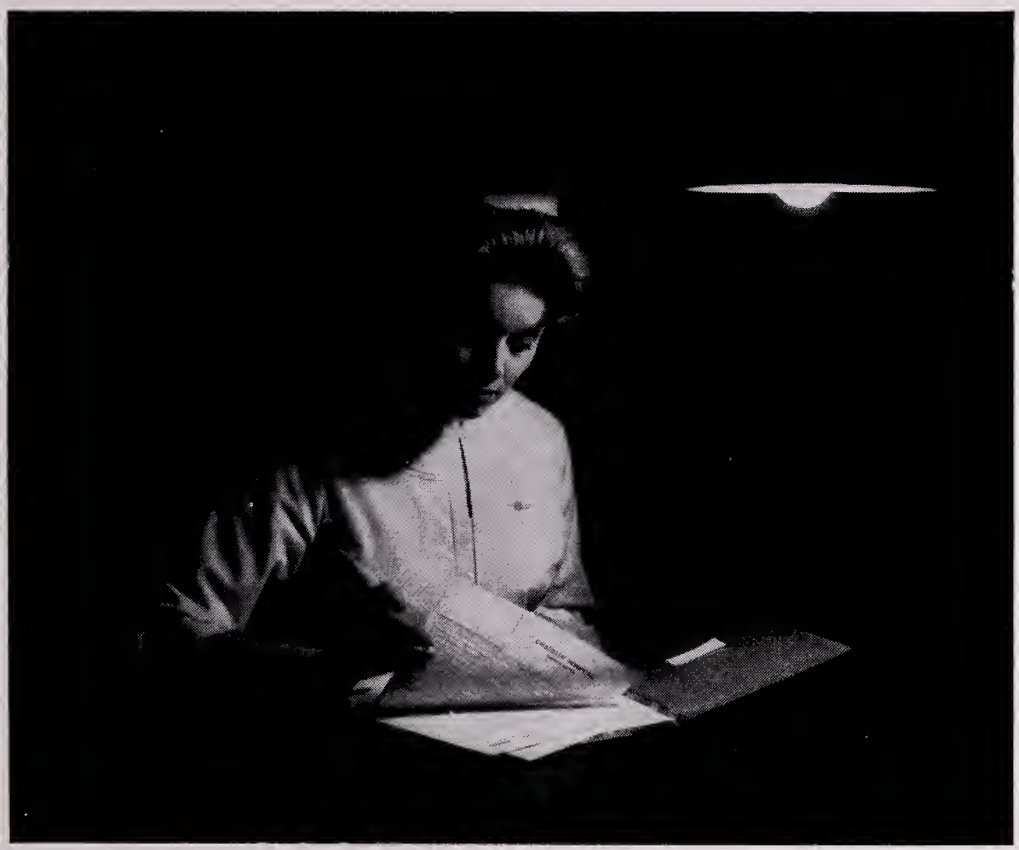
nursing care for cancer patients–

...a major concern for their families, *and* for their physicians. In a unique pioneering service, the American Cancer Society is deeply involved in finding a solution.

Recognizing the phenomenal growth of nursing homes—aware of the shortage of nurses—knowing the implications of the extended care benefits of Medicare—the Society has launched a dramatic educational demonstration project on cancer nursing for nursing home staff. Special emphasis is on colostomy irrigation, care of the laryngectomized patient, care of an ileal bladder, and emergency nursing. To achieve maximum application of this plan, a cadre of nurses is being trained by the Society to conduct cancer nursing courses in nursing homes throughout the nation.

This endeavor has been warmly endorsed by the American Nurses Association and other professional organizations. We feel sure that such a program, bringing skilled nursing care to the bedside of the cancer patient, will be enthusiastically received by the medical profession.

AMERICAN CANCER SOCIETY®



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The Denver Medical Society Library is ranked among the ten leading society-owned libraries in the country.

It is maintained and operated by its members for their use and, by reciprocal agreement with the Colorado Medical Society, for the use of physicians whose state Associations participate in the publication of the Rocky Mountain Medical Journal.

The collection contains approximately 50,000 volumes and receives more than 600 medical journals monthly.

The Library provides medical reference service (limited to a three-year search unless otherwise instructed). Physicians may come by, write, telephone or telegraph their requests for material. Items will be mailed on the day requested, if at all possible. Cost: Postal rates for "Educational Material," presently 10c first pound and 5c each additional pound or fraction. Photocopies of articles can be supplied at 10c per page.

Denver Medical Society Library, 1601 East 19th Avenue, Denver, Colorado 80218

Phone: 222-5817 (Area Code 303)

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Antihypertensive Therapy: Ciba Foundation Symposium. Berlin, 1966, Springer-Verlag. 632 p. Gift.
The Art of Predictive Medicine: Edited by Webster L. Marxer. Springfield, Ill., 1967, Thomas. 358 p. Price: $15.75.
The Boys of Boise: By John Gerassi. N.Y., 1966, Macmillan. 328 p. Price: $5.95.
Care of the Trauma Patient: Edited by G. Tom Shires. N.Y., 1966, Blakiston. 696 p. Price: $19.50.
Cell Physiology: By Arthur C. Giese. 2d ed. Phila., 1962, Saunders. 592 p. Gift.
Comparative Anatomy: By William Montagna. N.Y., 1959, John Wiley. 397 p. Gift.
Hormones and Hypertension: Edited by William Muir Manger. Springfield, Ill., 1966, Thomas. 265 p. Price: $12.75.
Immunological Aspects of Viral Oncolysis: By Jean Lindenmann. v. 9, Recent Results in Cancer Research. 84 p. Price: $4.50.
International Encyclopedia of Veterinary Medicine: Edited by Sir Thomas Dalling. Edinburgh, 1966. W. Green. 5 v. Price: $150.00.
The Medical Staff in the Modern Hospital: Edited by C. Wesley Eisele. N.Y., 1967, Blakiston. 523 p. Price: $15.95.
Mendelian Inheritance in Man: By Victor A. McKusick. Balt., 1966, Johns Hopkins Pr. 344 p. Price: $8.00.
Pioneering for Research: By Mark R. Everett. Oklahoma City, 1966, Univ. Oklahoma Medical Center. 83 p. Gift.
The Salicylates: By M. J. H. Smith. N.Y., 1966, Interscience. 313 p. Gift.
Shock: Chemistry, Physiology and Therapy: By William C. Shoemaker. Springfield, Ill., 1967, Thomas. 306 p. Price: $11.50.
Surgical Treatment of Congenital Heart Disease: By Denton A. Cooley. Phila., 1966, Lea & Febiger. 213 p. Price: $12.50.
The Ureter: Edited by Harry Bergman. N.Y., 1967, Hoeber. 683 p. Price: $30.00.
Veterinary Clinical Pathology: By Embert H. Coles. Phila., 1967, Saunders. 455 p. Price: $15.00.

Book Reviews

Medical Terminology for the Nonprofessional Employee: By Mary Lyle. 1st ed. Walnut Creek, Calif., 1967, The Mail Box. 186 pp. Price: $4.25.

This book is composed of words, phrases, sentences and terminology heard daily in hospitals, clinics and doctors' offices. It also includes words and phrases frequently misunderstood.

The surgical index assists the surgical secretary, and the same terminology contained in this section provides the anatomical index for histories, physicals, consultations, discharge summaries, progress notes, x-ray and pathological reports.

This would be a good desk reference for the medical secretary, but would not be of value for one with no knowledge of basic terminology fundamentals.

Doris M. Corey, Coordinator
The University Clinic Annex
University of Colorado Medical Center

Synopsis of Dermatology: By William D. Stewart, Julius L. Danto, and Stuart Maddin. St. Louis, 1966, Mosby. 664 pp. Price: $10.85.

The authors state that this new book is "for the nondermatologist who wishes concise but pertinent information, methods of diagnosis, and treatment of common and some uncommon skin disorders." It seems to this reviewer that they have hit the mark. This is not just another short outline made up primarily of illustrations, it runs over 600 pages and covers all except the rarest of dermatologic entities.

The first short section is devoted to anatomy, embryology and physiology and covers the high spots of current thought. Short sections on general therapeutics and dermatologic techniques are also included. A section on regional diagnosis offers the nonspecialist a quick summation of the various conditions which should be considered when confronted with a skin problem in a particular area of the body.

The organization and grouping of disease entities appears to be on a random basis, however, the presentation of material within each entity is concise and well organized. Each chapter contains information about the general nature of the disease followed by a brief microscopic description if it is pertinent. This is followed by a differential diagnosis and finally by an outline of treatment. The latter is up to date and concise and includes such new drugs as thiobendazole, tolnaftate and methotrexate for psoriasis. The place of occlusive plastic dressings is discussed as well as mention of the value of phlebotomy for Porphyria Cutanea Tarda. One of the nice features about the sections on treatment is that the authors give specific recommendations regarding a course to follow without forcing the reader to make a choice from a wide ranging discussion of various possible alternative methods of therapy.

The chapter on viruses contains information not available in older texts regarding classification and viral composition. Also, newly recognized clinical entities such as "hand, foot and mouth disease" are included.

The number of illustrations is ample and the full page color plates which are liberally distributed throughout the book are superb. The index is comprehensive and a short list of references for each general area is included if the reader desires to investigate a particular subject in greater depth.

This book is not encyclopedic, but it has much more to it than the usual manual or outline we all knew as students. It would seem to be a valuable addition to the library of the nondermatologist who encounters and treats skin disorders with any frequency.

Richard K. Park, M.D.

Cardiac Surgery: Edited by John C. Norman. N.Y., 1967, Appleton-Century-Crofts. 603 pp. Price: $15.00.

This book is unusual by its very up-to-date nature and refreshingly different format.

It is most comprehensive in all aspects of science relating to cardiac surgery. Each portion is complete and concise without undue emphasis on trivia. The illustrations are clear and pertinent.

Two of the contributors are from Colorado (Doctors Rosenkrantz and Paton) who have written the section on the results of cardiac surgery on infants and children. This section is clearly written and covers their assigned topic very completely.

By fragmentation of a subject and having the fragments covered by different investigators from various areas, its comprehension is extended far more than had one author from one institution covered an entire single subject. This book is a "must" for cardiac surgeons and those cardiologists and other personnel closely associated with the management of cardiac surgery patients. It is an excellent reference for all other physicians and those involved in the medical sciences.

W. Gerald Rainer, M.D.

Surgical Treatment of Congenital Heart Disease: By Denton A. Cooley and Grady L. Hallman. Phila., 1966, Lea & Febiger. 213 pp. Price: $12.50.

This is basically a beautiful, detailed atlas of cardiac surgery in congenital heart disease. More than the usual atlas, each section has an excellent narrative of the pertinent data of congenital heart lesions without being overly wordy.

The drawings by Herbert R. Smith, Director of Medical Illustration, Baylor University College of Medicine, are excellent.

Emphasis is placed not only on detailed and illustrated surgical technique but also x-ray appearance of almost all of the congenital heart lesions that are encountered in clinical practice. The need for this particular format has been apparent for a long time and we can only hope that these same authors will use this same approach to the surgical treatment of acquired cardiac disease.

W. Gerald Rainer, M.D.

Synopsis of Neurology: By Francis M. Forster. 2d ed. St. Louis, 1966, Mosby. 218 pp. Price: $7.50.

This book is designed for the medical student beginning clinical work in neurology. Its simplicity and brevity are commendable, but detail is obviously lost. The book certainly serves its purpose as a primer in neurology; no more should be expected of it.

Sidney Duman, M.D.

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Lomotil gets children with diarrhea off toast and tea and back to normal diets and normal activity with gratifying dispatch.

Lomotil slows the rapid propulsion of overstimulated intestines, permits absorption of excess fluid and controls diarrhea with notable promptness and effectiveness.

Moreover, lowered motility achieved with Lomotil relieves the abdominal cramps and discomfort so distressing to children.

Dosage: The recommended initial *daily dosages*, given in divided doses until diarrhea is controlled, are:

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1-2 yr. . . .½ tsp. 5 times daily (5 mg.)
2-5 yr. . . .1 tsp. t.i.d. (6 mg.)
5-8 yr. . . .1 tsp. q.i.d. (8 mg.)
8-12 yr. . .1 tsp. 5 times daily (10 mg.)
Adults: . .2 tsp. 5 times daily (20 mg.)
(or 2 tablets q.i.d.)

*Based on 4 cc. per teaspoonful.

Maintenance dosage may be as low as one-fourth the initial daily dosage.

Precautions: Lomotil is a Federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and tachycardia. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

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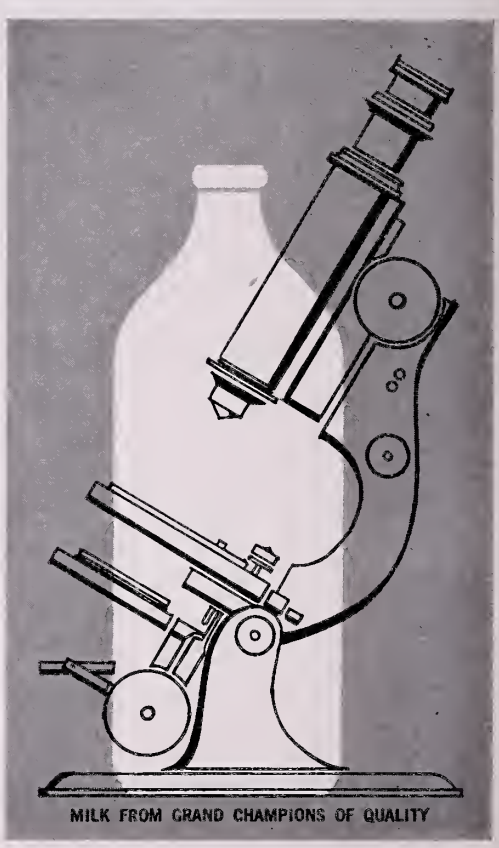

SOCIETY OFFICERS

Colorado Medical Society

OFFICERS 1966-67—Terms of Officers and Committeemen expire at the Annual Session of the year indicated. Where no year is indicated the term is for one year and expires Sept. 23, 1967, at the Annual Session in Colorado Springs.

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President-elect: Henry H. Zeigel, Collbran.

Vice President: Eugene B. Ley, Pueblo.

Treasurer: William A. Day, Colorado Springs, 1968.

Constitutional Secretary: Marvin E. Johnson, Denver, 1969.

Additional Trustees: Carl H. McLauthlin, Denver, 1967; Kenneth A. Platt, Westminster, 1967; William A. H. Rettberg, Denver, 1968; Robert W. Ludwick, Sterling, 1969.

Delegates to the American Medical Association: Harlan E. McClure, Lamar, Dec. 31, 1967 (Alternate, Vernon L. Bolton, Colorado Springs, Dec. 31, 1967); Gatewood C. Milligan, Englewood, Dec. 31, 1967 (Alternate, Ray G. Witham, Craig, Dec. 31, 1967); Kenneth C. Sawyer, Denver, Dec. 31, 1968 (Alternate, Robert E. McCurdy, Denver, Dec. 31, 1968).

Speaker, House of Delegates: Matthew L. Gibson, Aurora.

Vice Speaker, House of Delegates: John M. Wood, Englewood.

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Historian: Hermann B. Stein, Denver.

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Scientific Editor for Colorado and Chairman of the Editorial Board, Rocky Mountain Medical Journal: Douglas W. Macomber, Denver.

Assistant Scientific Editor for Colorado, Rocky Mountain Medical Journal: Carl H. McLauthlin, Denver.

Executive Secretary: Donald G. Derry, 1809 E. 18th Ave., Denver. Office Telephone 399-1222.

Montana Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.

President: Albert L. Vadheim, Bozeman.

President-elect: Alfred M. Fulton, Billings

Vice President: Mark B. Listerud, Wolf Point.

Secretary-Treasurer: Oscar A. Swenson, Sidney

Assistant Secretary-Treasurer: Hugh V. Anderson, Great Falls

Delegate to the A.M.A.: Herbert T. Caraway, Billings

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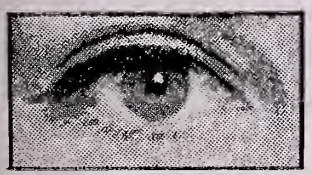

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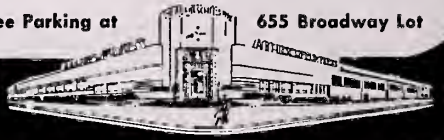

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Proceedings of the House of Delegates —Utah State Medical Association

21st Annual Rocky Mountain Cancer Conference Program

Pregnancy and the Use of Various Drugs

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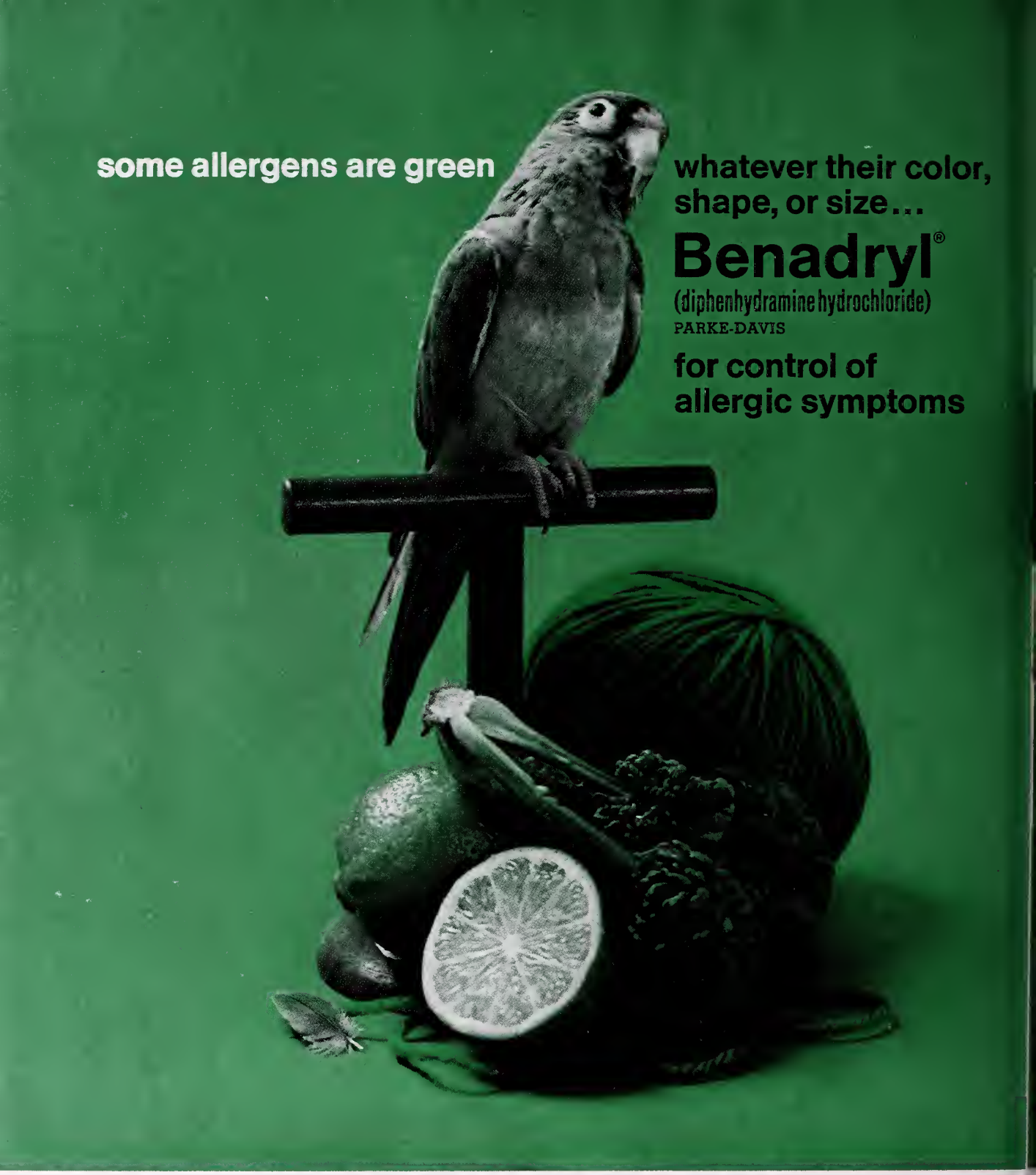

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References:

(1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., *38*:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

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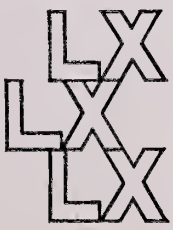

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Precautions: Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. Withdrawal symptoms upon discontinuation have been noted in some patients exhibiting drug dependence through chronic overdose. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive, prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Withdrawal symptoms following abrupt discontinuance are similar to those seen with barbiturates. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

Not indicated in children under 6 years; absolute dosage for 6- to 12-year-olds not established.

Side Effects: Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (morbilliform, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leucopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age.

These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever and euphoria.

Availability: Capsules of 10, 15 and 30 mg. oxazepam.

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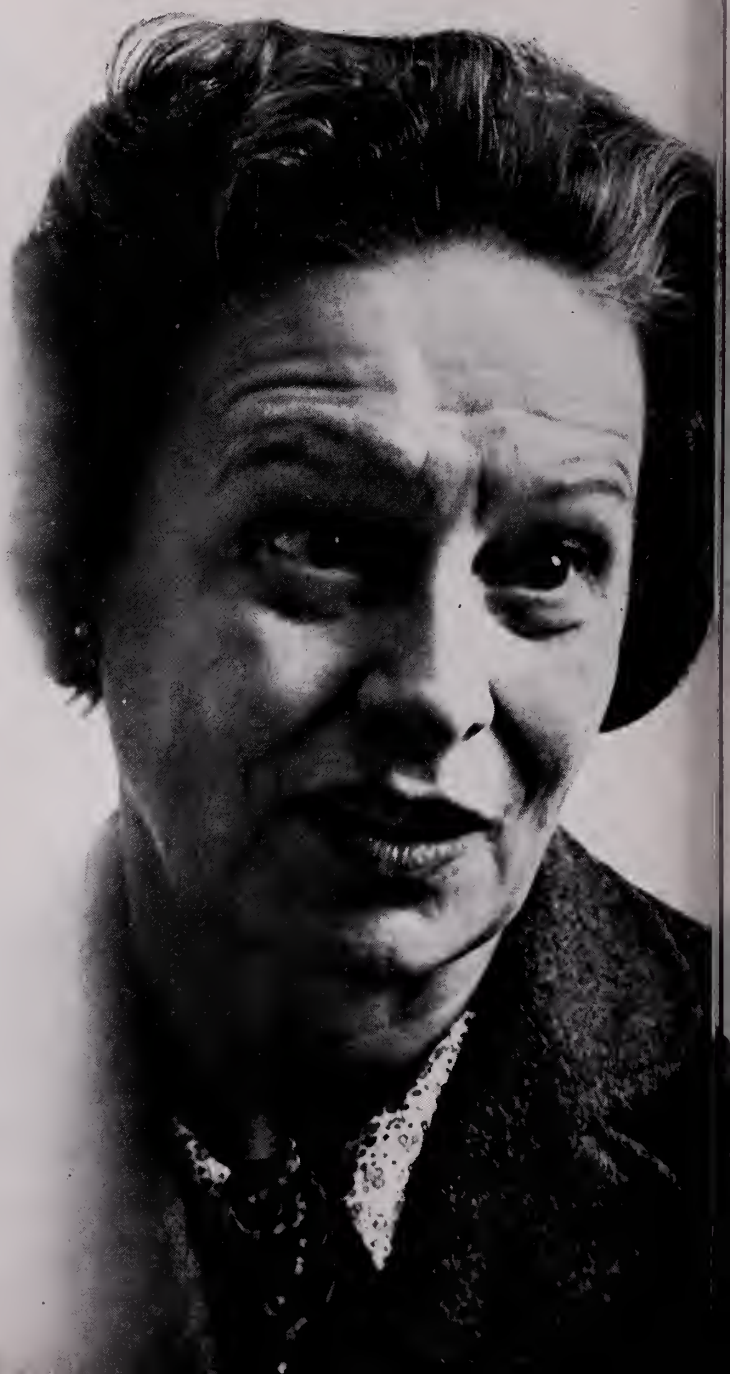

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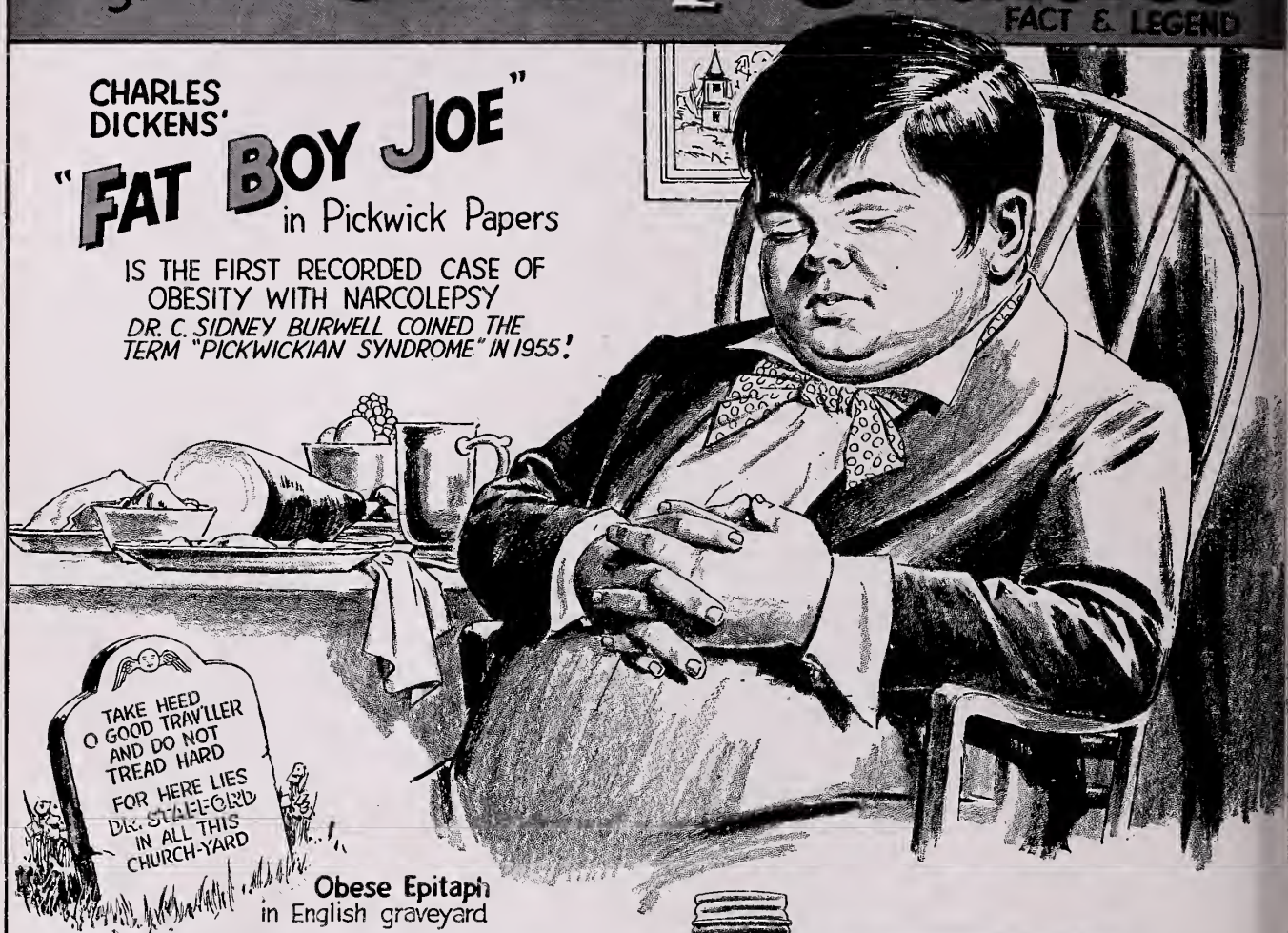

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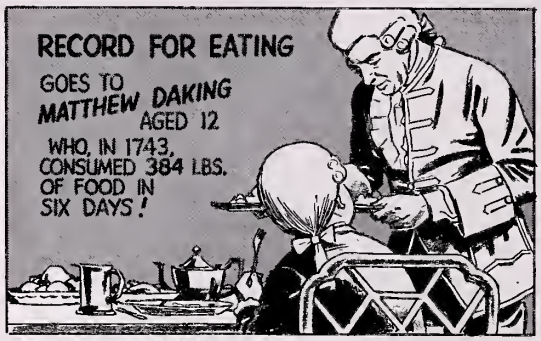

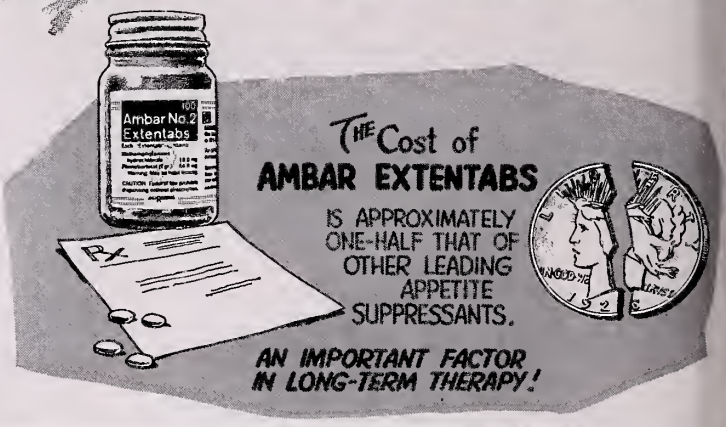

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Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

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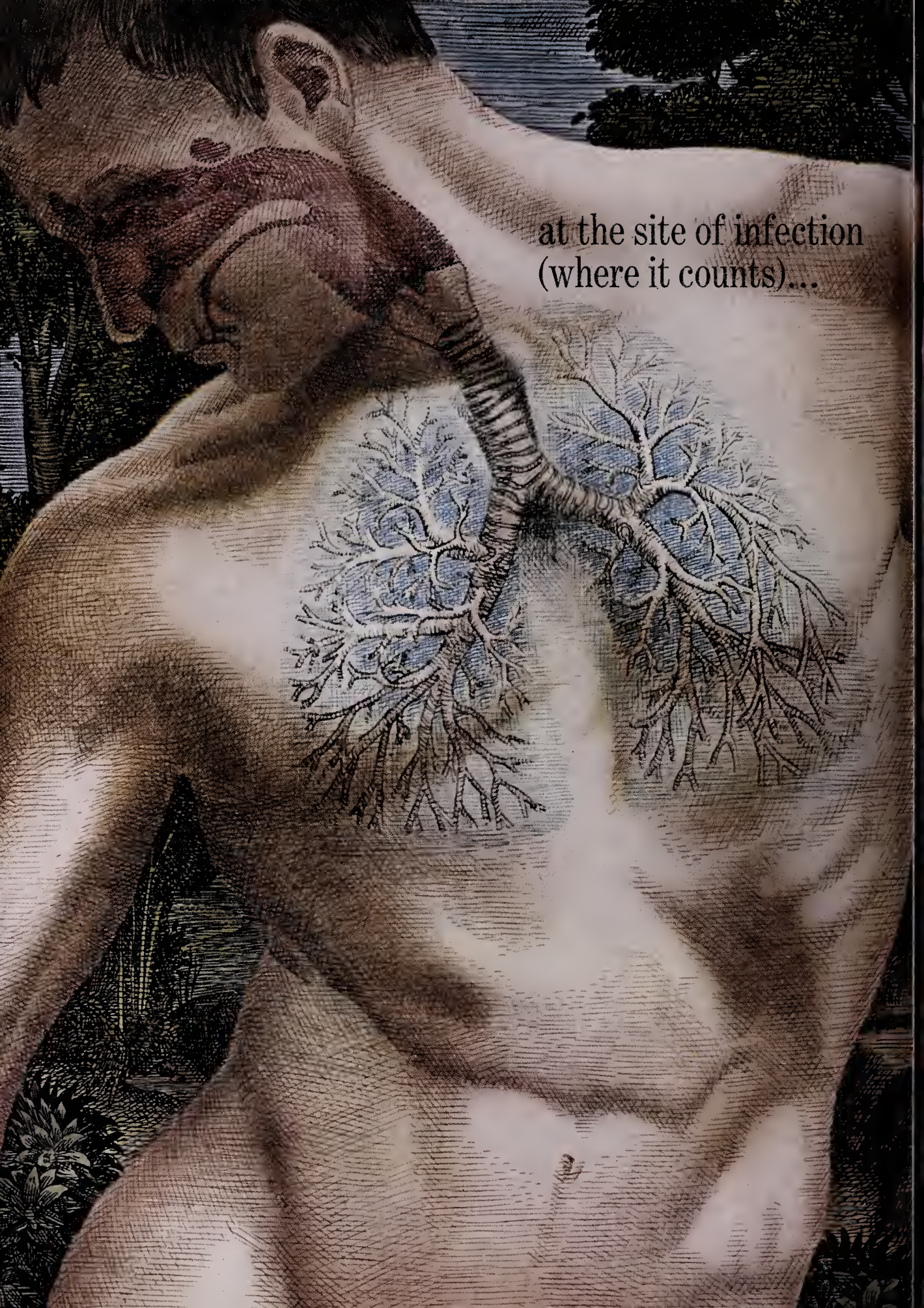
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In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

700121

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Erythromycin Estolate

(See next page for prescribing information.)

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Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Side-Effects: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have appeared in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly if the drug is readministered to sensitive patients, usually within forty-eight hours. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings characterized by increased direct-reacting bilirubin, el alkaline phosphatase levels, negative or weakly positive ce flocculation and thymol turbidity tests, elevated serum glu oxalacetic transaminase levels, peripheral eosinophilia, an mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice h been reported in other patients taking prolonged courses medication. Patients with chronic infection have been give to 2 Gm. of the drug daily for periods of two to six month patients with rheumatic fever have taken prophylactic do 0.5 Gm. daily for two years without difficulty. In one gro 144 patients who received the drug daily for two years, no dice was noted. It was of interest that members of six of patients' families, who were not taking the drug, had ep of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels determined in a group of fifty-four adults and children wh 250 mg. of Ilosone daily for an average of sixteen mon rheumatic fever prophylaxis. The results were compared those of a similar group of forty-four patients who receive icillin. There were no cases of jaundice in either group. Ele of SGPT and serum alkaline phosphatase levels during the of treatment was observed in one patient treated with I and in two patients treated with penicillin. Seven other pa in the group receiving Ilosone and four others in the pen group showed elevations in one of the tests at some time c administration of the drugs.

Very satisfactory therapeutic results, without toxicity, reported in 102 pediatric patients who received short-term day) courses of Ilosone in the treatment of streptococcus tions. Results of liver function tests in these patients were parable to those in a similar control group who had re penicillin.

Gastro-intestinal disturbances not associated with hepa fects are observed in a small proportion of individuals as a of a local stimulating effect of the medication on the alim tract; however, the normal intestinal gram-negative ba flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with t of erythromycin, there have been occasional reports of urti skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally

Ilosone Pulvules®
Ilosone Chewable Tablets
Ilosone Drops
Ilosone, 125, for Oral Suspension

For infants and for children under twenty-five pounds o weight, the usual dosage is 5 mg. per pound every six hou children twenty-five to fifty pounds, 125 mg. every six (Tablets Ilosone Chewable should be chewed or crushe swallowed with water.)

For adults and for children over fifty pounds, the usual of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythro therapy should be considered.

In the treatment of syphilis, the recommended total dos 20 to 30 Gm. given in divided doses for a period of ten to days. Close follow-up of the patient is necessary since er mycin drugs have not had adequate evaluation in all sta syphilis. Examinations of spinal fluid are recommended a of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four da recommended. In the treatment of gonorrhea, patients suspected lesion of syphilis should have a dark-field exami before receiving antibiotics, and monthly serologic tests be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 2 (equivalent to base), in bottles of 24 and 100.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to in bottles of 50.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in size packages, with dropper calibrated at 25 and 50 mg.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equi to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size pac

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:6
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:39
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198,

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Eli Lilly and Company, Indianapolis, Indiana 46206.

following infection

B and C vitamins are therapy: STRESSCAPS B and C vitamins in therapeutic amounts...help the body mobilize defenses during convalescence...aid response to primary therapy. The patient with a severe infection, and many others undergoing physiologic stress, may benefit from STRESSCAPS capsules.

Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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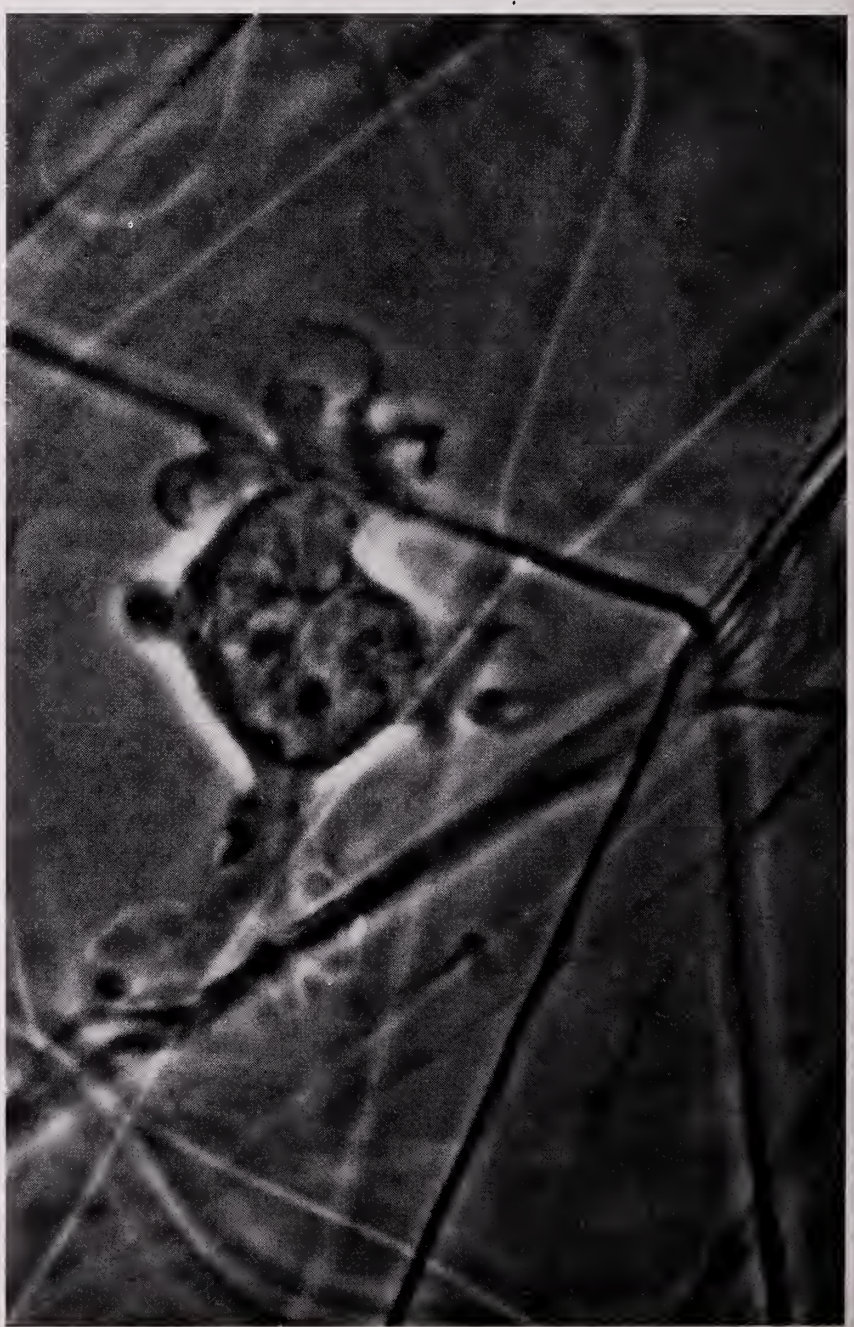
INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

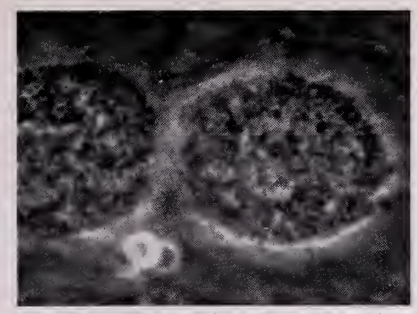


Visual evidence of how corticosteroids influence the inflammatory reaction

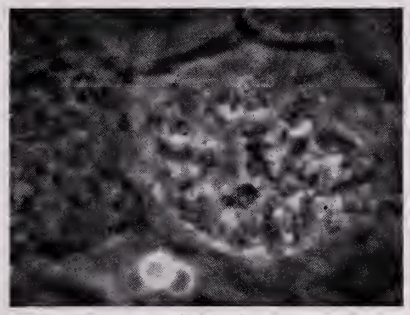
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



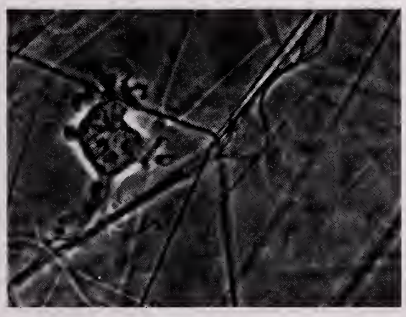
Phase-contrast microscopy showing mast cell before injury.



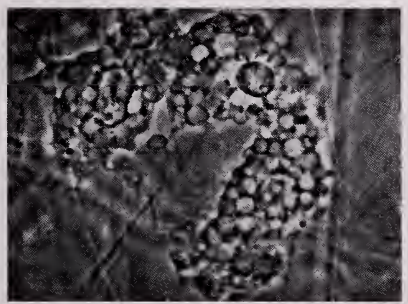
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

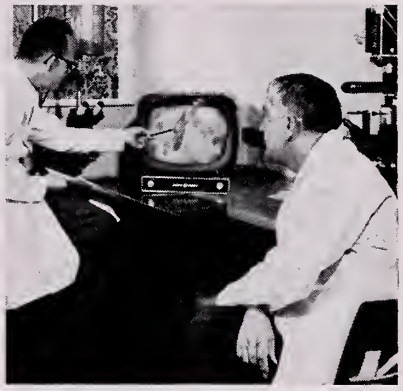
Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



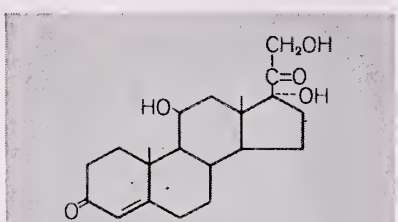
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

**A New View of Corticosteroid Action in Inflammatory Dermatoses,* a film based on this study, is now available from your Syntex representative.

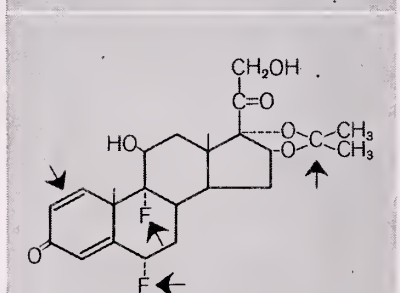
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

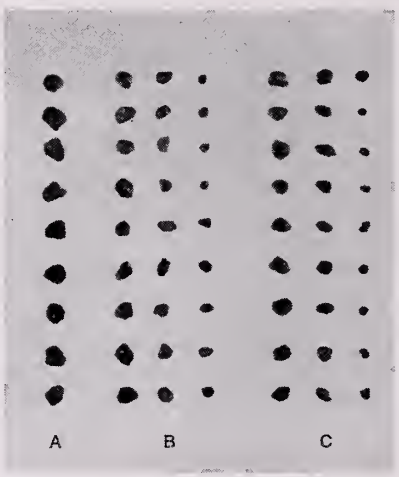


Fluocinolone Acetonide (Synalar)

- ☐ *a double bond between carbons 1 and 2*
- ☐ *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- ☐ *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.

THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

t is particularly gratifying that the romise of the advanced chemical lesign and high order of bioassay ac- ivity of Synalar (fluocinolone ace- onide) has been confirmed by /idespread therapeutic application. ndeed, the impressive clinical re- ponse rate of Synalar has been docu- nented in no fewer than 232 papers rom 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

'RESCRIBING INFORMATION

'or initiation of therapy: Cream 0.025%, and 15 Gm. tubes, 425 Gm. jars; *for mollient effect:* Ointment 0.025%, 15 m. tubes; *for maintenance therapy:* 'ream 0.01%, 15 and 45 Gm. tubes, 120 m. jars; *for intertriginous or hairy ites:* Solution 0.01%, 20 cc. and 60 cc. lastic squeeze bottles; *for infected in- ammatory dermatoses:* Neo-Synalar® ream (0.025% fluocinolone acetonide, eomycin sulfate, equivalent to 0.35% eomycin base), 5 and 15 Gm. tubes.

ONTRAINDICATIONS: Tuberculous, fungal, nd most viral lesions of the skin, (in- uding herpes simplex, vaccinia, and aricella). Not for ophthalmic use. Con- aindicated in individuals with a his- ory of hypersensitivity to any of the omponents. PRECAUTIONS: Synalar prep- cations are virtually nonsensitizing and onirritating. However, the solution may roduce burning or stinging when ap- lied to denuded or fissured areas. In ome patients with dry lesions, the solu- on may increase dryness, scaling or ching. While topical steroids have not een reported to have an adverse effect n pregnancy, the safety of their use on regnant females has not absolutely een established. Therefore, they should ot be used extensively on pregnant pa- ents, in large amounts, or for pro- longed periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this oc- curs, appropriate therapy should be insti- tuted. When severe local infection or systemic infection exists, the use of sys- temic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corti- costeroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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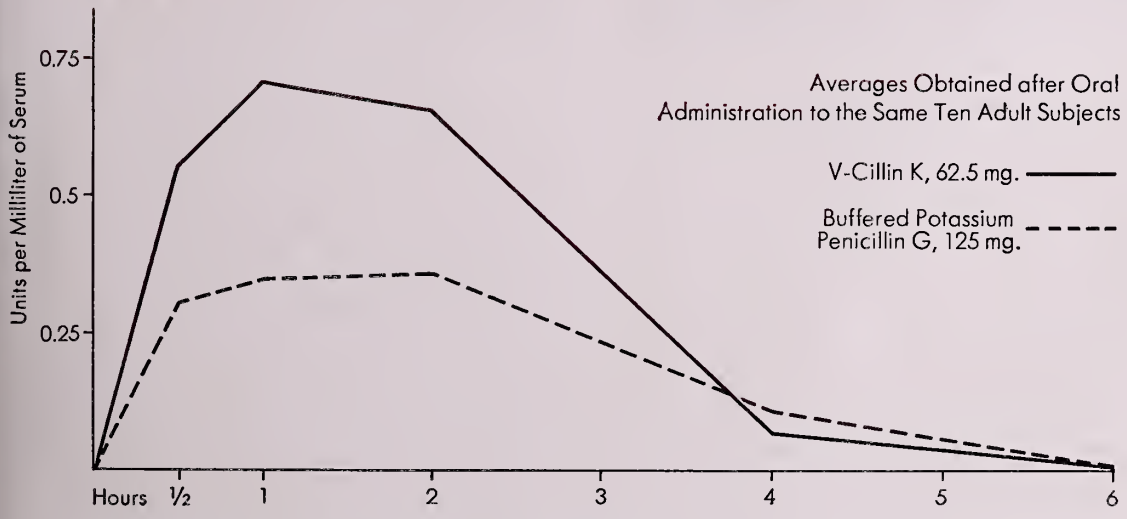
because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumaniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Claxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

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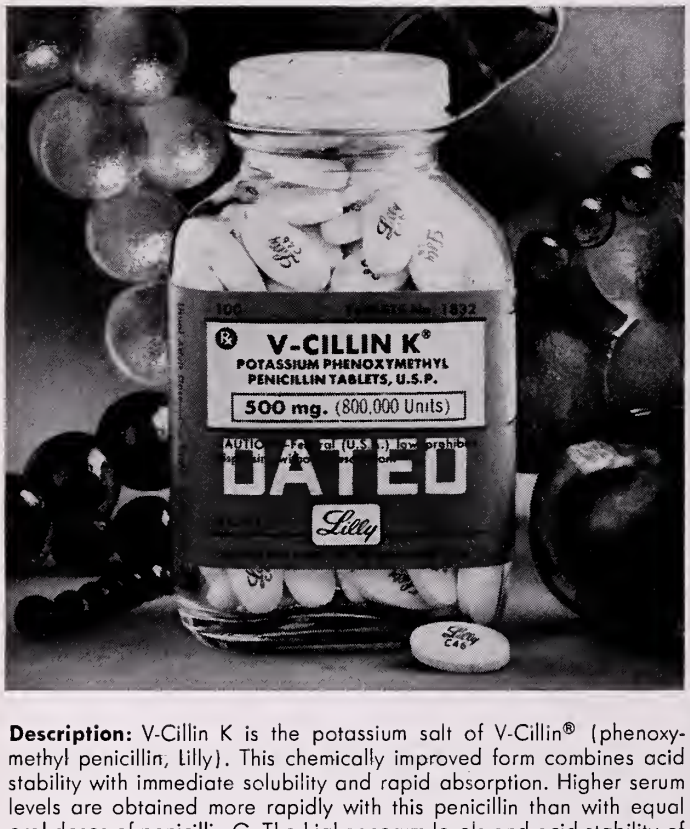
Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with l parenteral dosage schedules, frequent evaluation of the renal hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory stu (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth pencillin-insensitive organisms. In such cases, its administration sh be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much common with administration of oral penicillin than with intramusc forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does passess a sig cant index of sensitization. The following hypersensitivity react associated with the use of penicillin have been reported: skin ra ranging from maculopapular eruptions to exfoliative dermatitis; caria; and reactions resembling serum sickness, including chills, fe edema, arthralgia, and prostration. Severe and often fatal anaphy has occurred (see Warnings). Hemolytic anemia, leukopenia, th bocytapenia, and nephropathy are rarely observed side-effects are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cill Pediatric, the usual dasage ranges from 125 mg. (200,000 units) t times a day to 500 mg. (800,000 units) every four hours. For inf the daily dosage may be 50 mg. per Kg. of body weight divided three doses.

Beta-hemolytic streptococcus infections without associated teremia may be treated with 200,000 to 400,0000 units three tim day. Therapy should be continued for a minimum of ten days to pre development of rheumatic fever and/or other serious complicat Dosage for routine streptococcus prophylaxis in patients with a hi of rheumatic fever or congenital heart disease may be 200,000 once or twice daily. When such patients undergo tonsillectomy, t extraction, or other minor surgery, the prophylactic dose shoul 500,000 units every six hours given two doys prior to surgery an two days postoperatively. If oral medication is not feasible on the of surgery, parenteral therapy should be considered. Mild to m ately severe pneumococcus pneumania has been treated effec with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be every six to eight hours in conjunction with indicated surgical p dures.

For gonorrhea in males, 500 mg. (800,000 units) every four hou three doses may be employed; in females, 500 mg. every four l for six doses are recommended. Refractory infections generally res to a second treatment three to four days following completion c first. Treatment of gonorrhea with severe complications shoul individualized, with prolonged and intensive treatment. Patients v suspected lesion of syphilis should have a dark-field examinatio fore receiving penicillin and monthly serologic tests for a minim three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 unit bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [0

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lil

Picture of bursitis

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'arafon Forte helps to relieve pain, estore mobility . . . stop pain-spasm feedback

[ere is why. PARAFON FORTE provides:

nonsalicylate analgesic equal to aspirin for the relief f pain,[1,2] yet unlikely to produce the irritation to the astric mucosa so often associated with salicylate ıerapy[3]

ıd a skeletal muscle relaxant shown to have up to a -hour span of action,[4-6] and to retain effectiveness ven on continued administration,[5-7] but which does not ıve the central effects of tranquilizing compounds.

rescribe PARAFON FORTE for lasting spasmolysis ıd analgesia in sprains, strains, myalgias, low back ain, bursitis and other musculoskeletal disorders. our patients will appreciate the restored comfort ıd lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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*U. S. PATENT NO. 2,895,877

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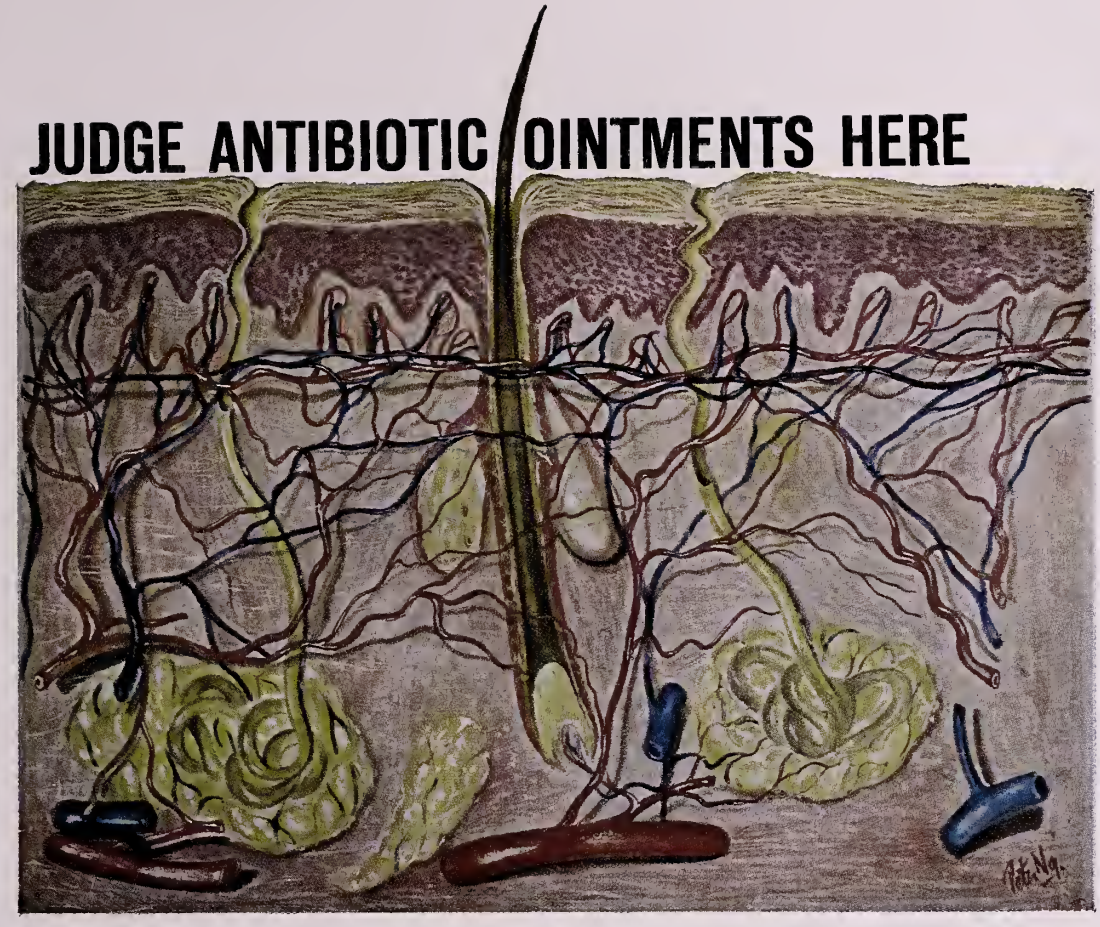

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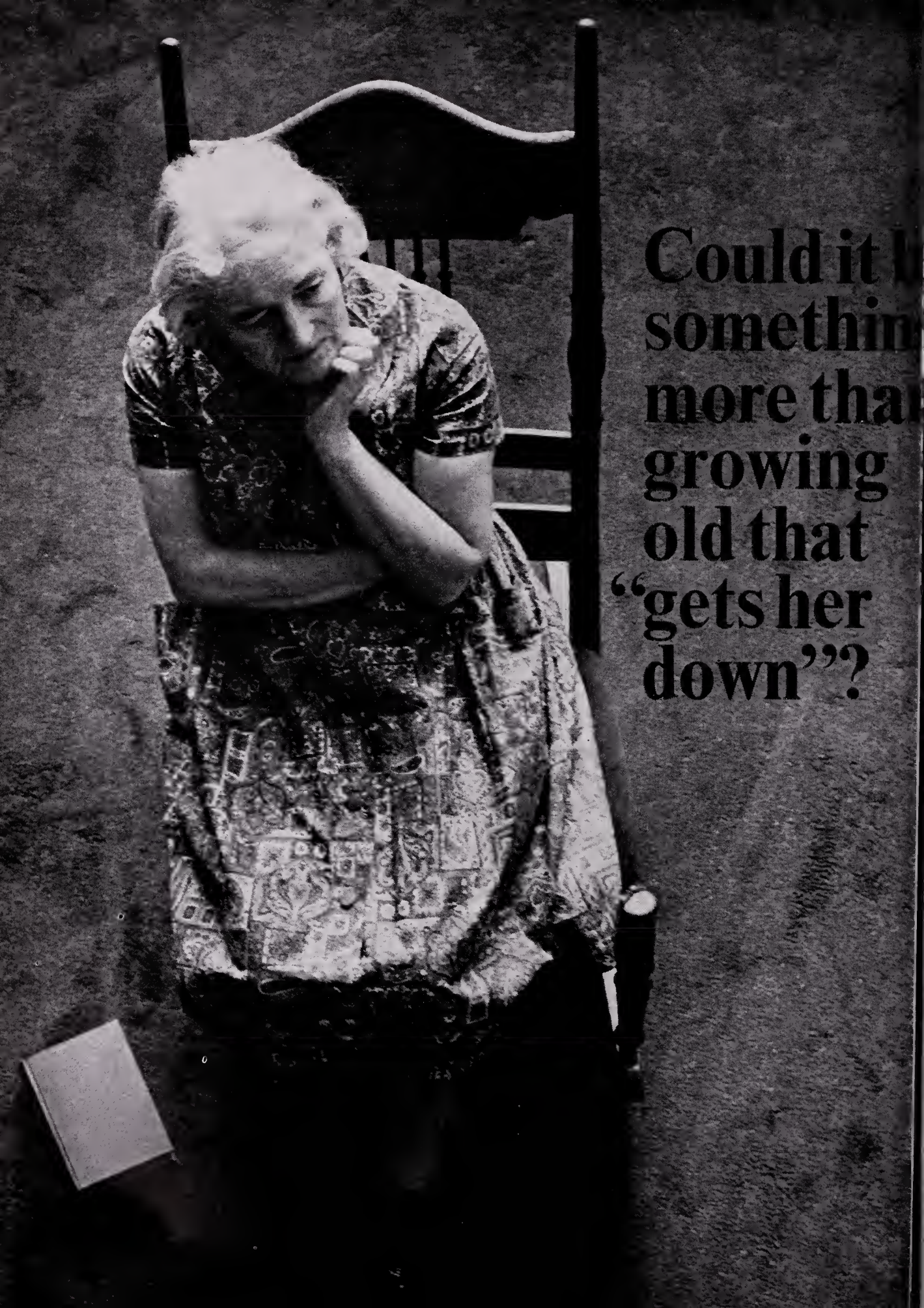
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†The need for these substances in human nutrition has not been established.

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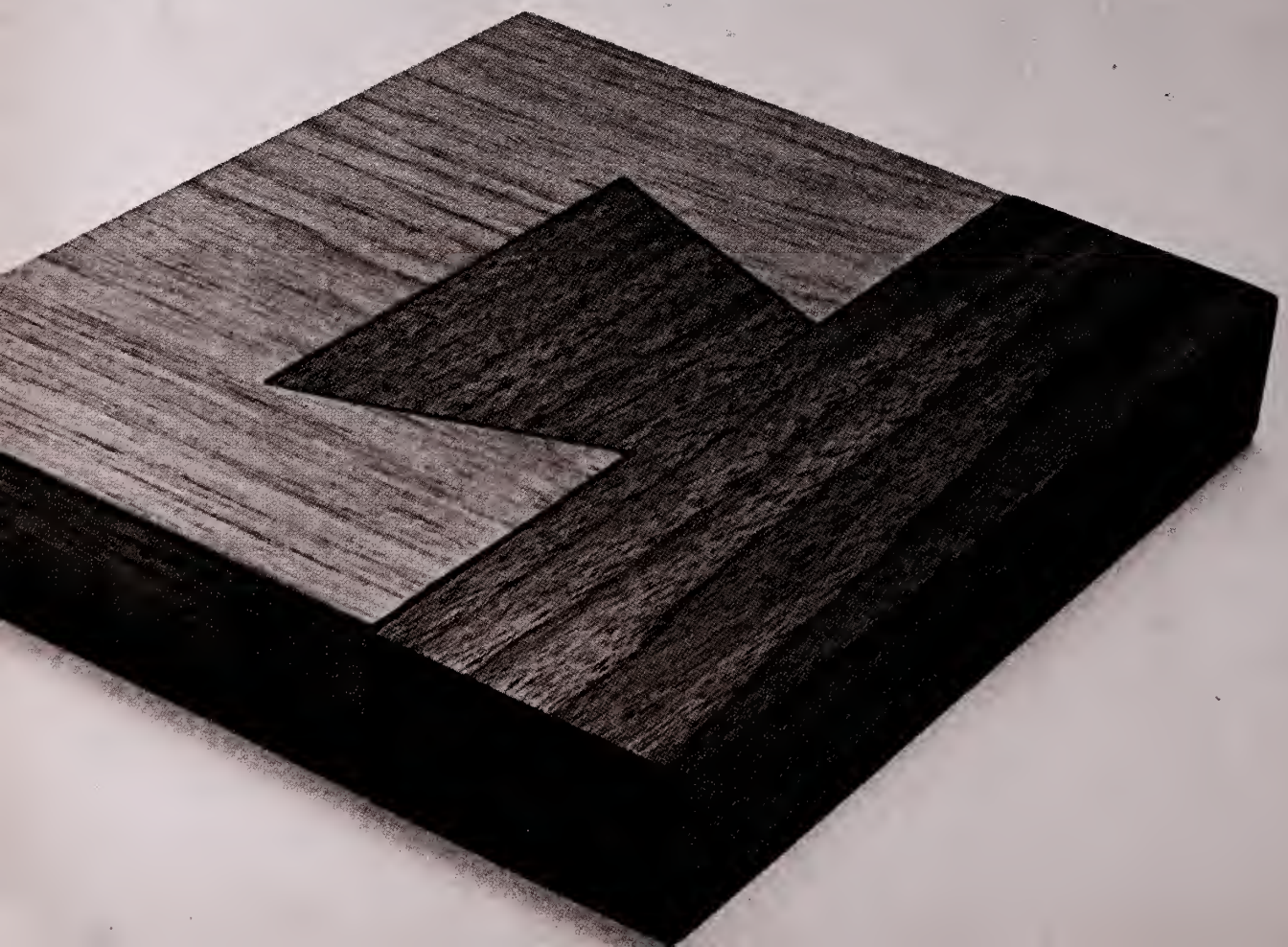

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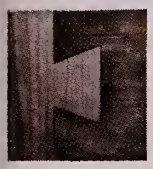

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Rx Serpasil-Esidrix Combination Tablets

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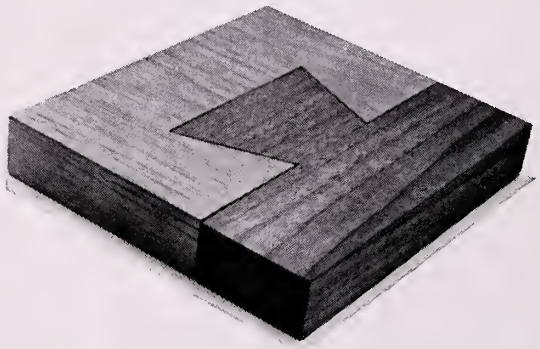
Combination Tablets



INDICATIONS: Mild to moderate hypertension, especially when complicated by anxiety, tachycardia, or edema.

SIDE EFFECTS AND PRECAUTIONARY MEASURES

Serpasil® (reserpine CIBA)
Occasional side effects: lassitude, drowsiness, nasal congestion, looseness of stools, increased frequency of defecation. Rare side effects: anorexia, headache, bizarre dreams, nausea, dizziness, skin rash.

Severe mental depression has appeared in a small percentage of patients, primarily in a dosage above 1 mg daily. When the drug is discontinued, depression usually disappears, but hospitalization and shock therapy are sometimes required.

Caution: Withdraw reserpine 2 weeks before surgery, if possible. For emergency surgical procedures, give vagal blocking agents parenterally to prevent or reverse hypotension and/or bradycardia.

Because reserpine may increase gastric secretion of hydrochloric acid, use cautiously in patients with peptic ulcer.

Use cautiously with digitalis, quinidine, or guanethidine. Not recommended for aortic insufficiency.

Esidrix® (hydrochlorothiazide CIBA)
Contraindictions: Oliguria, renal shutdown, progressive hepatic disease, and allergy to thiazides.

Warnings: Stenosis, hemorrhage, and ulceration of the small bowel have occurred with coated potassium tablets. Discontinue such medication when used with Esidrix if gastrointestinal disturbances arise.

Pay special attention to electrolyte balance of patients with severe renal or hepatic insufficiency. In patients with cirrhosis and ascites, watch for symptoms of impending hepatic coma. Thiazides may decrease glucose tolerance; use cautiously in diabetics. Hyperuricemia may occur but is readily reversed by a uricosuric agent. Lowering of blood pressure may sometimes result in nitrogen retention, particularly in patients with impaired renal function. Dosage titration is necessary in such patients.

Precautions: Watch for signs of fluid or electrolyte imbalance. Further electrolyte depletion may cause hypochloremic alkalosis and hypokalemia. Since the latter may precipitate digitalis intoxication, watch carefully patients who are taking digitalis or its glycosides or those with cardiac arrhythmias. In severe hypokalemia, large oral or intravenous doses of potassium may be required.

A few infants born of mothers who received thiazides during pregnancy have shown bone marrow depression with thrombocytopenia. Hydrochlorothiazide decreases responsiveness to exogenous norepinephrine and increases responsiveness to tubocurarine. Hypotensive episodes under anesthesia have been observed in some patients receiving thiazides.

Side Effects: In addition to those above, nausea, anorexia, headache, restlessness, constipation, dizziness, paresthesias, fatigue, increased sweating, cramps in arms and legs, diarrhea, abdominal pain. Rare reactions: purpura with or without thrombocytopenia, skin rash, photosensitivity, urticaria. Sometimes associated with hydrochlorothiazide: leukopenia, agranulocytosis, aplastic anemia, pancreatitis, jaundice, necrotizing vasculitis.

DOSAGE
Average dosage is 2 *Tablets #2* daily. For patients requiring less hydrochlorothiazide, substitute *Tablets #1*. For maintenance, reduce dosage to lowest effective level. When necessary, more potent antihypertensive agents may be added gradually in reduced dosages.

SUPPLIED
Tablets #2 (light orange), each containing 0.1 mg reserpine and 50 mg hydrochlorothiazide; bottles of 100 and 1000. *Tablets #1* (light orange), each containing 0.1 mg reserpine and 25 mg hydrochlorothiazide; bottles of 100 and 1000.

Consult complete literature before prescribing.

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THE WASHINGTON SCENE

The American Medical Association proposed that Congress set up a National Commission on Health Resources and Medical Manpower with broad powers to supervise the drafting of physicians for military service.

The AMA recommendation was presented by Dr. Albert H. Schwichtenberg, chairman of the AMA Council on National Security, at a Senate Armed Services Committee hearing on S. 1432 which would provide for a four-year extension of the present draft law expiring June 30.

Other AMA recommendations for modification of the doctor draft program included:

—Expansion of the physician draft pool to include women doctors.

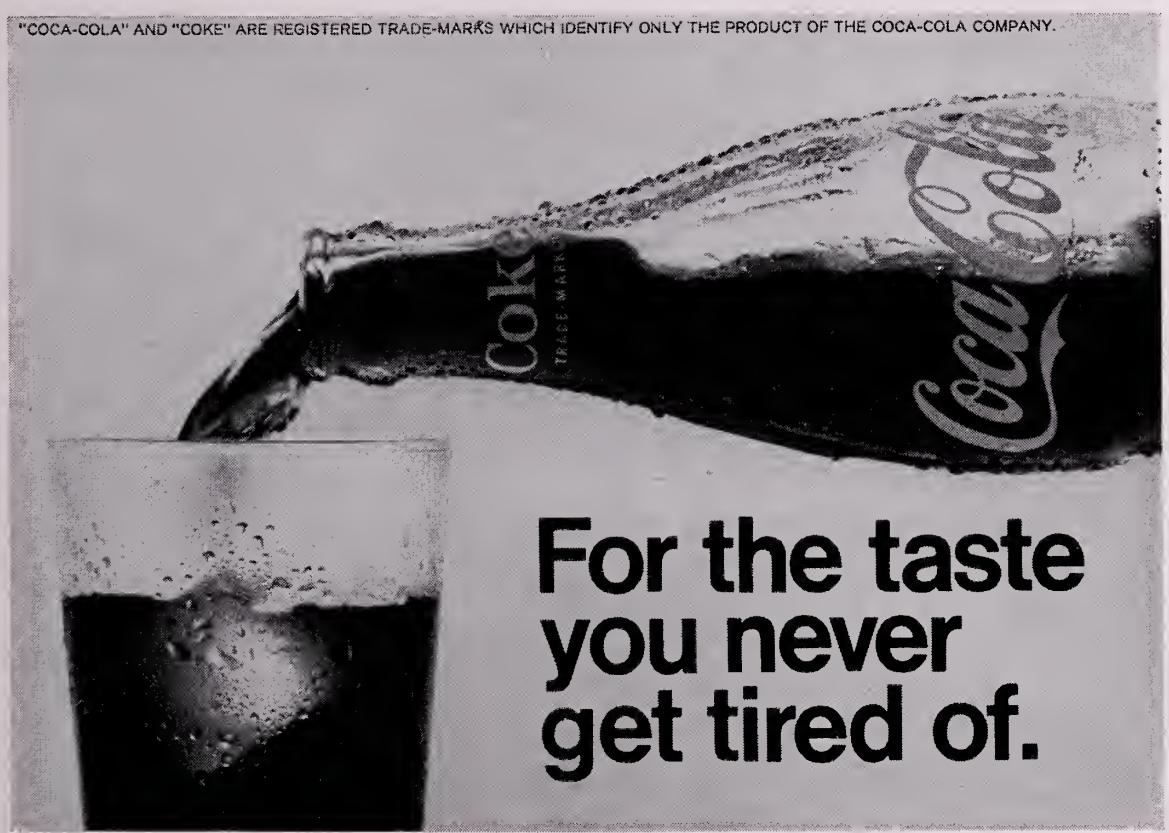
—Making subject to draft call foreign physicians under 35 years of age, with permanent visas or who have subsequently become citizens, and who may not be subject to call because they were not deferred from induction while under age 26.

—Limiting credit for fulfillment of the draft obligation to only service performed in the armed services. (Under the old law, service in the Public Health Service could satisfy a physician's obligation for active military duty.)

—Routine transfer, upon completion of an internship, of the jurisdiction of physicians to the local draft board serving the area in which the physician is engaged in training or practice.

—Changes in the pay and promotion policies for military physicians designed to increase the retention of career military physicians.

"Our primary recommendation . . . is the creation of a National Commission on Health Resources and Medical Manpower," Dr. Schwichtenberg said. "This Commission would replace and be responsible for the functions of the present National Advisory Committee and the Health Resources Advisory Committee. This new Commission, under the direction of the President, would have the responsibility of maintaining a proper balance of health personnel, within existing resources, among the Armed Forces, other Government agencies, and the civilian population. Requests of the Secretary of Defense for health manpower in the military would be reviewed and approved by the Commission. The Commission would establish for the Selective Service System criteria for classifying, reclassifying and determining the order of selection for health personnel. Under this proposal, the present State Advisory Committees would be redesignated as State Health Manpower Committees, whose activities would be coordinated by the National Commission. It is further recommended that the Commission should be constituted from among persons of outstanding national reputation in the health-care fields, and its composition should include substantial representation from physicians in private practice."



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BECAUSE one reaches his 65th birthday, the government automatically becomes financially responsible for the major part of his health care. To many of us this fact seems ridiculous! Nevertheless, age 65 has a significance which we dare not forget.

Age 65—Its Real Significance

Problems and issues are rarely reduced to their basic premises, especially in politics and government. The basic proposition of the Medicare Law is that certain citizens shall be guaranteed free health care by the government, and the cost of the same shall be paid by all the citizenry, at present by the taxation of the employed. This concept is Socialism. However, we were never allowed specifically to debate Socialism as an issue; the Medicare Law was passed by the 89th Congress for innumerable expedient, sentimental, and political reasons with little discussion of its premise.

However, this adoption by the government of a socialistic concept has a well-known antecedent. In the early days of our nation we accepted a law with a similar basis—public education. It was proposed that all children had the right to free schooling, and that the cost of their education would be borne by all taxpayers, whether or not they had children of their own. There was great argument, heated debate, and public excitement over the merit, the cost and the fairness of the proposition—relatively more activity than that related to Medicare. In the end, the argument that education of youth was vital for the safety, strength, and growth of the nation won the day for the adherents of public education.

Norman Thomas says, "Socialism is both a doctrine and a movement which seeks to place in the hands of the people, either directly or through their government, the ownership and control of the principal means of production and distribution." Many activities in a democracy are socialistic. The proportion of this activity to the total activity and to the total economy of a government determines whether or not the government is socialistic. Politicians tend to avoid this measurement of their schemes of governmental action. Use of federal funds is so much the easiest route that the alternatives are not explored. Measurement of socialistic activity is not important to the social worker, not useful to the politician (in fact detrimental), and not thought of by the voter. We shall never be given a straightforward chance to vote upon whether we want Socialism or Democracy!

It is the limitations on these socialistic activities that permit their existence in a democracy without destroying the democracy. The socialism inherent in public education has been limited by restricting its control to the community and state; attempts to ignore this limit by allowing federal intervention threaten the democracy by giving the central government control of a principal means of production. Medicare is already fully controlled by the central government. The limitation to this piece of socialism is the restriction of its application to a certain segment of the population—those over 65. The age requirement for guaranteed health care prevents all of the health industry from being socialized. If the health fields become the second largest industry in America in the next ten years, as predicted, that which keeps the health industry from becoming socialized prevents national socialism.

Limitation of this socialistic concept is the real importance of age 65—if in our nation, we have not already passed too many other limits.

"Euthanasia"

AMONG the rewards of practicing medicine are the lessons we learn from patients. All we need to do is listen to their comments when we want to know how we're doing as doctors. Aware that we are what people say we are behind our backs —usually, that is—they also frequently tell us right out. Especially children and elderly people. And if most of what they and all the rest said was not favorable, we wouldn't be in business long!

Now and again someone gets to us by another route, such as in a letter to a newspaper editor. Such a gem appeared upon the editorial page of The Denver Post several weeks ago. Its title was "Euthanasia", about which relatively little has been said since Sir William Osler said many decades ago that it has its place. Perhaps the theme was silenced by bitter criticism heaped upon Sir William from all parts of the world. But words of wisdom were recorded recently by the pen of a thoughtful lady, now 80, and sent to the newspaper. She said, in part, the following in words more poignant than we could devise:

Tomorrow I will be 80. Eighty long, full years —eighty years of hope, disappointment, struggle and triumph—eighty years of watching the most wonderful change that the world has known—in conquering space, both in height and depth, in communication, and in medicine. Our doctors practically bring the dead to life. They do such marvelous things with the human body that it is to be wondered if they are not usurping a power that should not belong to man. They have given us "the pill" for which if unborn children had a voice would thank them. But they also keep alive poor, defenseless old bodies who cry for release. They cannot hear the cry of the unborn but they could, if they would, hear the cry—the bitter futile cry—of the helplessly old.

Let us have one more pill. I have visited nursing homes where down one long corridor after another are poor old bodies, many from whom the power of reason has gone. But we keep them and feed them—whether against their will or not. We even give them intravenous feeding. We give physical care, both loving and unloving, as the doctor or nurse is made. It's so cruel—so really barbarous. In this I say we rather than you since a doctor still has to live within the limits of society's opinions. But it has admitted "the pill," the birth control pill that 50 years ago would have been unthinkable.

And I do not ask my doctor or my family to give me the pill. I want the pill in my possession—that's all—but early enough so that I may go out with decency and self-respect. You need only give me pain or sleeping pills with definite instructions of how many not to take, and you are free, and what it would mean to me is greater than all the Social Security the state can offer. It will be a long time before society will accept this, I know, but it will come.

Think what it would mean to know that the added years will be more and more a burden—not only to themselves but to all they hold dear, to watch love turn to care, care to a burden, and sometimes burden to resentment. Think what a comfort to our later days to know that this need not come about.

Do not give me the old argument about the sacredness of human life when we send the finest of our young men to kill or be killed—when murder on the highway takes thousands each year.

World population is the problem of everyone. Nor am I shunning responsibility. Rather, I am accepting it. I am only being realistic.

No, I haven't overdrawn the picture. Eighty years is a nice length of time to have watched the change in seasons on our beautiful earth—to appreciate. Why wait until my eyes fail me and my senses grow so concerned over the pains and aches in the old body that I no longer see the beauty of the earth which, after all of this time, seems the one thing worth having been born and lived for.

We are grateful to this thoughtful lady who expresses herself so well, who notes what medical and other science has brought upon mankind. Who among us has not had similar thoughts, particularly when noting many spent and unrewarding lives still extant in various institutions? And more often than not we are quietly thanked for sensible restraint in administering the oxygen, pushing antibiotics, hooking up the artificial kidney, or performing a hopeless operation! There are times when playing God should not be for us. It is then that Medicine and Religion serves best.

An unusual tumor involving the facial bones*

R. R. Anderson, MD, and W. Kemp Absher, MD, Pueblo, Colo.

THE TUMOR described in this report arose in the maxilla and extended to the temporomandibular joint, up into the sphenoid sinuses, and forward into the bony orbit. Radiopaque material predominates, and there are interesting differences of opinion about it.

Case Report

This 40-year-old white male was admitted to the Colorado State Hospital on December 1, 1964. He was admitted from another state institution because of a painful swelling in the left cheek and protrusion of the left eye.

His early childhood history was insignificant except at about the age of eight or nine he had developed a painful swelling in the left cheek. This was not too noticeable according to the patient, but was painful and remained so until about the age of puberty, when this swelling ceased to progress and he no longer suffered any pain or discomfort from it. No examination was done by a physician and no x-rays were taken.

Several months prior to being admitted to the Colorado State Hospital, the cheek was swelling a little more and was becoming painful. He was having difficulty with his left eye and it was protruding more than the right eye.

Examination revealed a healthy white male about the age of 40. There were no significant physical findings except that the left cheek appeared swollen and consisted of a hard, bony mass, not too obvious at first glance. The second significant finding, of course, was moderate proptosis of the left eye.

X-rays of skull and facial bones revealed a striking tumor involving facial bones on the left. Sectional radiography was done in addition to numerous views of the facial and orbital areas. They revealed a large tumor containing some osteoid-like or calcific material arising from the maxilla in an expanding fashion to the floor of the sphenoid sinuses and forward into the left bony orbit. The radiologist believed that, although this was an unusual tumor, it probably was a fibro-osseous dysplasia, as described by Dr. Jaffe.

Fig. 1. X-ray (viewed posteriorly) showing fibro-osseous dysplasia on patient's left.

The patient said that in the armed services during the second World War x-rays were taken and a biopsy done. We learned that the diagnosis was fibro-osseous dysplasia. The Surgical Department felt that it would be impossible to excise this tumor in toto, so an attempt was made to relieve the proptosis. This was performed with a moderate

*From the Department of Radiology, Colorado State Hospital, Pueblo, Colorado.

Fig. 2. Lateral view from right side.

amount of success and considerable tissue removed. The Pathology Department felt that, while it was not characteristic of anything they had seen before in fibro-osseous tumors, it might fit within a diagnosis of fibro-osseous dysplasia.

X-rays and some of the tissue were sent to various pathologists and radiologists over the United States. Among these were Dr. Morgan Berthrong, head of the Pathology Department at the Penrose Cancer Hospital in Colorado Springs, Colorado. He felt that this was an extremely unusual tumor. The case was also reviewed by Dr. Juan del Regato and Dr. James McMullen of the Penrose Cancer Institute. Dr. Berthrong felt that there were many elements in the sections suggesting the same type of material as in cementomas; however, he thought the best diagnosis, although not definitive, should be ossifying fibroma.

Dr. Lauren Ackerman in St. Louis thought the pathology was so unusual, it was difficult to make a definitive diagnosis. However, his best diagnosis would be a fibrous osteoma and the patient probably would not have further trouble. In his opinion and according to most of the literature, fibrous osteoma and fibro-osseous dysplasia are two different conditions.

The Armed Institute of Pathology gave us the following report: "The staff is unable to offer any more satisfactory opinions than those you have already received. The mass is made of collagen; therefore, it can be called a fibroma: it is calcifying and, therefore, it can be called a calcified fibroma. If one believes that the lesion is a neoplasm, such terminology is adequate. If one believes that the lesion was non-neoplastic, but an abnormal overgrowth of atypical tissue, then one would add the term dysplasia. Both decisions about neoplasms and dysplasias are opinions rather than facts. Only the collagen and calcification are facts. Occasionally, masses seen in tumors may look somewhat like this, so that not even this may not be excluded on a small biopsy. The staff regrets that it can offer nothing that really settles the discussion. The staff would be a little bit disposed to favor the descriptive term of calcifying fibroma."

The patient now is doing well. There is no pain and proptosis has been corrected by removal of a portion of the tumor involving the left bony orbit.

Comment

During the early 1930's some tumors found in bone were beginning to be diagnosed as ossifying fibromas. Dr. Jaffe, in New York City, conceived the idea of fibro-osseous dysplasia. When he wrote his book and numerous articles, he felt that these tumors, which had been called ossifying fibromas, were probably the same as fibro-osseous dysplasia, a well established entity, and was a more adequate term.

He pointed out that some of these fibro-osseous dysplasias were not only dysplasias, as indicated by fibrous material, but also of osseous material and, in cases involving the maxilla, osseous dysplasia was sometimes a predominant feature. Also, these tumors usually arise in childhood and, as a rule, cease to grow or cause trouble at puberty. However, a few subsequently regain some growth potential and continue to grow, sometimes with cystic change and hemorrhage.

All pathologists who investigated this lesion agreed it was benign and showed no tendency toward malignancy. This case has been presented because of striking involvement noted on the x-ray film, apparently either fibro-osseous dysplasia or some other tumor mentioned by the pathologists. •

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Streptococcal pharyngitis*

Occurrence and characteristics in rural practice

Ham Jackson, MD, Jack Cooper, MD, W. J. Mellinger, MD, and A. R. Olsen, MD, Fort Morgan, Colorado

Previous studies of streptococcal pharyngitis have been related to selected groups such as the Armed Forces, school groups, and clinic populations. There are no reports published of studies on patients as seen in a rural private practice. During a six-month interval pertinent data was recorded for cases of respiratory infection with either a positive culture for group A beta hemolytic streptococci, or an infection clinically serious enough to warrant antibiotics. 870 patients were studied and 265 of these had positive cultures. General characteristics of the patients with and without positive cultures are presented.

ALTHOUGH THERE IS VOLUMINOUS LITERATURE based on excellent studies of streptococcal pharyngitis and its sequalae, there is need for additional studies. There are unanswered questions concerning this disease and its proper management, especially in private practice and more so in rural practice. Most of the reported studies have been done on special population groups such as the Armed Forces, charity clinics, teaching institutions, children's homes, etc. The few statistics that have been obtained from private practice are from urban specialty practices, which are also select groups. The pattern of streptococcal disease in general practice and especially in rural areas is a facet of this disease which has not been studied.

We are located in a large rural county in Northeastern Colorado, an area with a high incidence of symptomatic streptococcal infection (Fig. 1), rheumatic fever[1] and rheumatic heart disease.[1, 2] By collecting detailed data on streptococcal disease in our practice, we hope to elucidate unseen facets of this infection. Some aspects of this disease are rather nebulous and will require a large number of cases before any valid statistics can be derived and will be evaluated in later reports.

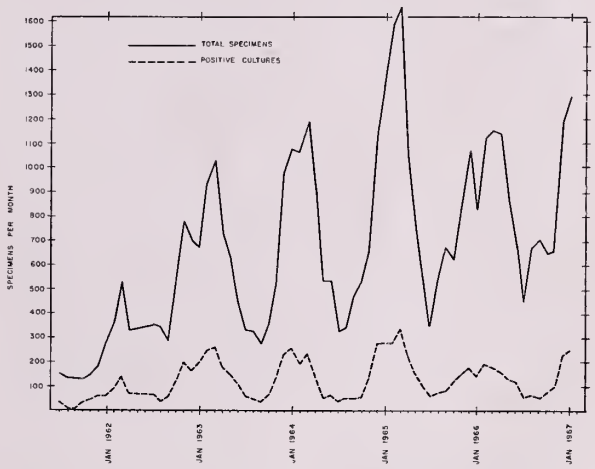

Fig. 1. Seasonal incidence of streptococcal infection as indicated by pharyngeal cultures received by the Northeast Colorado Health Department.

Methods

In our practice, pharyngeal cultures *for group A beta hemolytic streptococci* are taken from all patients with respiratory infection. Patients with positive cultures are given adequate courses of antibiotics, all of their household contacts are cultured and treated if positive, and follow-up cultures are made on all positives. Technical details of our routines are described elsewhere.[3, 4] In

*From the Fort Morgan Medical Group, Fort Morgan, Colorado.

our usual procedure marginal punch data cards are completed on patients with positive cultures. However, in order to get a more nearly complete picture of streptococcal pharyngitis in our practice, it is desirable to have comparison data on patients with significant respiratory infection but with negative cultures. During a six-month period we recorded detailed data on the punch cards for most patients seen in our practice with respiratory infection severe enough to warrant antibiotic therapy in the opinion of the clinician. Approximately 70 patients were not included in the study because they had been included within the previous three months, they were seen outside the office, or data was too incomplete for evaluation.

Results

Data were recorded on 870 patients. These represent the majority of patients seen in our office during the study period who either had positive cultures for group A beta hemolytic streptococci (265 patients, 30.5 per cent) or who had respiratory disease with enough purulent complications to indicate clinically the use of antibiotics. Common colds and other mild respiratory diseases were not included. Totals for the various factors analyzed are not equal because complete data were not available on all patients.

Information was available on duration of symptoms prior to seeking medical advice for 699 patients, 544 (78 per cent) of whom were seen within five days of onset of symptoms. There were 155 (22 per cent) patients with only mild or moderate symptoms while 457 (78 per cent) had severe symptoms. Of the 457 patients with severe symptoms, 271 (59 per cent) had the severe symptoms less than two days and 453 (97 per cent) less than five days before they sought medical care (Fig. 2).

Although the occurrence of respiratory infection was greatest in the pre-school age group (28 per cent of the total) the proportion with streptococcal infection (25 per cent) was less than the average for the total group. The early school years (age 5-10) had the second highest occurrence of respiratory infection with 26 per cent of the total, but this group had by far the greatest proportion with positive cultures (53 per cent). On the opposite end of the age scale, only 8 per cent of the patients were in the over 40 years age group and their streptococcal proportion was 7 per cent. These results are shown graphically in Fig. 3.

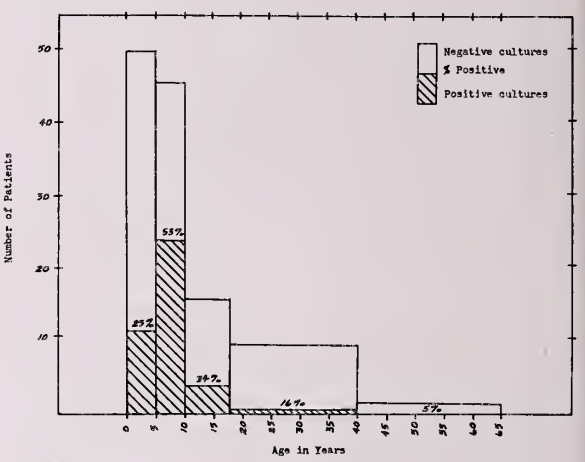

Fig. 3. Age distribution of patients with respiratory illness serious enough to warrant antibiotics.

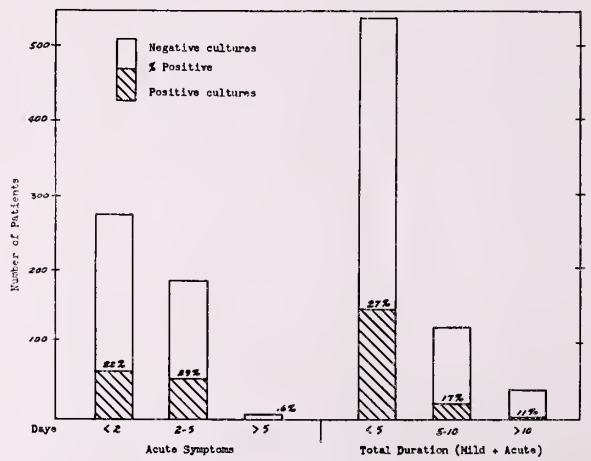

Fig. 2. Duration of symptoms prior to seeking medical attention.

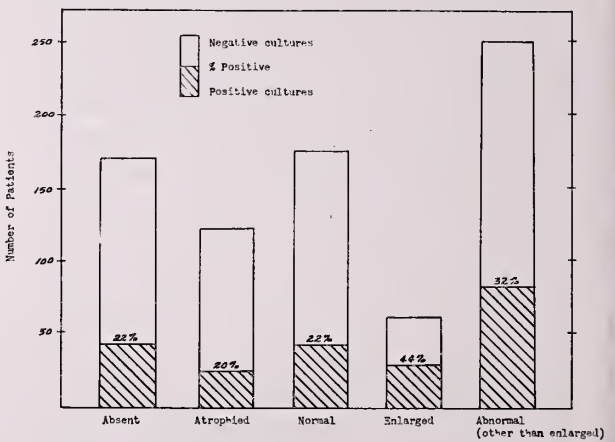

Fig. 4. Tonsil condition of patients with streptococcal pharyngitis.

Tonsil condition was rated in 785 of the patients. 469 (60 per cent) had normal, atrophied or absent tonsils, while 316 (40 per cent) had enlarged or abnormal tonsils. 110 (35 per cent of 316) of the patients with enlarged or abnormal tonsils had positive cultures, compared with 91 (19 per cent of 469) of those without tonsil abnormality (Fig. 4).

The severity of illness in patients correlated with the incidence of streptococcal infection. Positive cultures were found in 18 (10 per cent) of 168 patients with mild symptoms; in 86 (21 per cent) of 414 patients with moderate symptoms; and in 47 (47 per cent) of 101 patients with toxic symptoms. However, the majority of the cases of streptococcal infection were found in the moderately ill group because this was by far the largest group (Fig. 5).

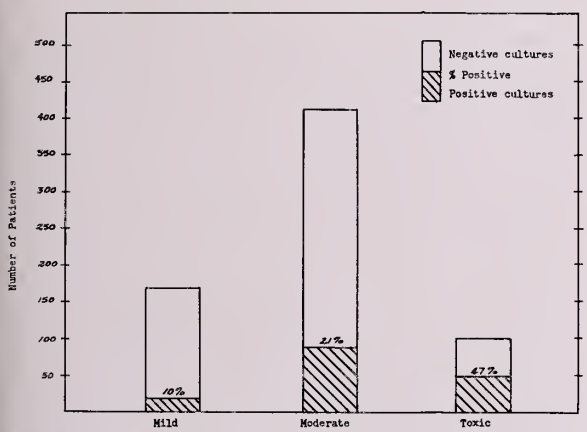

Fig. 5. Severity of illness in patients with respiratory illness serious enough to warrant antibiotics.

There were 553 household contacts in whom the severity of illness was rated and 114 (20 per cent) of these had positive cultures. 475 (86 per cent) had no symptoms, and of these 80 (17 per cent of 475) had positive cultures. More significant is the fact that 78 (14 per cent of 553) of the contacts did have some symptoms, and of these 34 (43.5 per cent of 78) had positive cultures (Fig. 6).

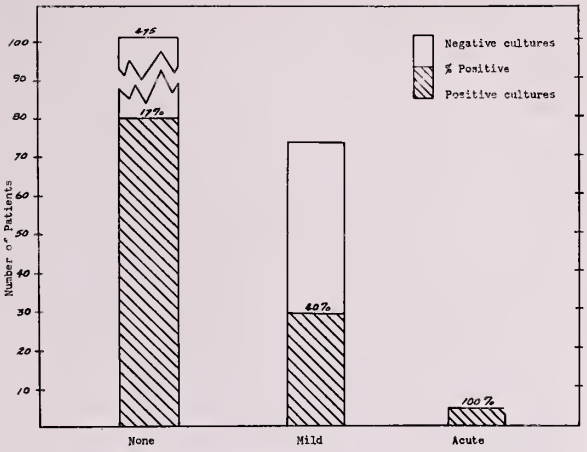

Fig. 6. Severity of illness in the household contacts of patients with streptococcal pharyngitis.

Discussion

Management of streptococcal disease in a manner which is scientifically sound and yet clinically practical is a subject in itself. Details of a rational management for a rural general practice, acceptance by patients and families, and results of treatment regimes we have reported elsewhere.[3, 4] Briefly, our studies have shown excellent patient and family cooperation and good results with ten days of therapy with penicillin G, lincomycin, or erythromycin.

Conclusions

1. In our rural practice most of the patients with respiratory disease serious enough to warrant antibiotics seek medical aid within five days of onset.

2. There is a high incidence of streptococcal infection in the 5-10 year age group as compared with other age groups.

3. The incidence of streptococcal disease in the over 40 age group is low.

4. Patients presenting with enlarged or otherwise abnormal tonsils have a greater incidence of streptococcal infection, but there is a considerable incidence in patients with absent or normal tonsils. •

ACKNOWLEDGEMENT

Mrs. Betty Baker, R.N., Mr. Pat Freeburg, B.S. (Bacteriologist), and Miss Linda Lauck gave valuable technical assistance.

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The violent sex offender

A consideration of emasculation in treatment

Horace E. Campbell, MD, Denver

This review of part of the world literature leads this reviewer to the conclusion that emasculation should be adopted in the United States as an important but rarely used element in the medical armamentarium for the control of the violent sex offender. The review is not exhaustive, and it is urged that many doctors study the European experience and rationale. The author believes that these have something to teach us.

About 3:30 A.M., on June 3, 1963, an 11-year-old child, terrified, watched from her front porch as Charles Woodren Broussard, 31, ex-convict, tall, husky Negro, dragged her mother across the street by the ankles. She had been wakened by her mother's screams after the woman looked out the door when she heard a noise on the front porch. Broussard jerked the mother out of the doorway, knocked her to the floor with a fist blow in the face, then began kicking her. On December 16, 1964 he was sentenced to 25-30 years in prison for the kidnap-rape-beating, which the judge described as "barbaric." The sentencing featured a tearful appeal to the judge by Broussard's wife, Norma, on behalf of the couple's three small children.

Le Blanc, "the phantom rapist," implicated in thirteen rapes, was arrested in June, 1964. It should be stated that Le Blanc has been sentenced to one term of 53 to 76 years, and on conviction in a second case for 63 to 76 years, the two to run concurrently, plus a consecutive sentence for 3-6 years for breaking and entering, to render him eligible for parole in 1995.

During the publicity attendant upon these cases, the author recalled a short note in the Journal of the American Medical Association regarding the imposition of castration upon some 80 cases of violent sex offenders by a Pasadena judge during the preceding years, one of them a physician who expressed his gratitude to the judge for the relief and transformation which the judge had brought into his life. The author thereupon determined to consult the medical literature concerning this mode of treatment of the violent sex offender.

One of the first works encountered was the excellent monograph,[6] Sex Offenses, by Manfred Guttmacher, whom I had come to know personally while we were members of two different committees of the American Medical Association. He graciously sent me several of his reprints, and otherwise guided my reading. It was in this monograph, as I recall, that I first learned of the Conference on Crime sponsored by the University of Colorado, August 15-18, 1949, on the Boulder campus. Dr. Guttmacher was one of the number of nationally prominent contributors, which included Drs. Harry Elmer Barnes, Walter Bromberg, Paul W. Tappan, C. C. Hawke, and many others. I was able to find no Denver physician who had attended this conference or who knew of its occurrence. Likewise, no Denver library had a copy of the proceedings, Crimes of Violence. I was able to get a copy through an inter-library loan.[21]

Dr. Hawke's paper was entitled Castration and Sex Crimes. At the time, he was the Director of the State Training School at Winfield, Kansas, an institution for the feeble minded. A Fellow of the American College of Surgeons, he had amassed a series of 330 castrates for study by such nationally prominent physicians as Dr. James B. Hamilton

and Dr. Paul D. White. Their conclusions, and those of others, are summarized by Dr. Hawke as follows: Physically, the castrate is an improved organism. General health and longevity are increased. . . . Contrary to general belief, castrates are not sexually incapacitated. The sex drive is admittedly reduced, but successful marriages with regular sexual performance are recorded in the study. Obesity does not follow per se, nor do the male castrates tend to baldness in the same incidence as noncastrates. The operation is not followed by changes in voice pitch, unless surgery is performed before the patient has achieved maturity, nor is the individual's basic energy capacity materially altered. The over-all picture is of an individual toned down to a moderate energy-drive level associated with improved general health and increased longevity.

Report of a case

One of his most impressive cases is reported as follows: M. B., colored male, present age 36. This inmate was admitted to the institution from an orphanage at an early age where they had a great deal of difficulty in controlling him. He is a big man about 6'2" in height and now weighs around 215 pounds. As a boy he was a bully in every way and very brutal to smaller boys. During his stay in the institution he made numerous escapes and always fell into the hands of the law when away from the institution. He would be returned by the legal authorities, and was considered a great menace to society. He was recommended for operation in 1931 at the age of 18. The board refused to consent to castration and recommended vasectomy instead. This was done, and one month later he escaped from the institution and raped a small girl in Wichita. Following this episode the board recommended castration, which was done. Following the second operation he gave very little trouble at the institution; he was paroled about three years later, and later discharged. In 1941 he married and moved to Wichita where he obtained employment and has been a law-abiding citizen ever since.

Another instructive case is that of A. B., white male. He was admitted in 1936 at the age of 17, with an I.Q. of 64 at that time. His papers stated that he was a sex problem and the authorities in his local county considered him unsafe to be released. He made repeated sexual advances to girls and was considered very dangerous. This man was castrated in 1943 and was paroled that fall. Later he was discharged. He visited the institution last week when he told us that for the past four years he has been married and acting as a janitor at an apartment house. His wife, who was a former inmate of the institution and who had been sterilized by salpingectomy, stated that they were both getting along very well.

Dr. Guttmacher, whose recent death is a serious loss to American medicine, wrote me on January 18, 1965, "I have visited Herstedvester, the Danish institution where castration is carried out in certain serious sex offenders. To me, it seems a more logical and more benign procedure than locking them up indefinitely."

California studies recorded

My search then led to California. It was Judge Collier[3], Superior Court Judge at Pasadena, who had initiated the castration in some 50 cases of sex offenders. By the time of my inquiry he had died, and no published record of his series of cases is known. He stated that there had been no recidivism, but there is some question as to the out-of-state follow-up. I learned that Judge Turrentine[20], of San Diego, had a comparable series at about the same time, of whom he stated that success was uniform. It seems that Dr. Kinsey made a study of some of his cases and concluded that some had engaged in illegal sexual activity, but no longer employed violence. By the time of my inquiry, Dr. Kinsey had died, and his successor, Dr. Paul H. Gebhard, states that these cases investigated by Dr. Kinsey did not number more than a half dozen.[5, 20b]

This led me to the California Sexual Deviation Research project of 1950-54 carried out by several legislative committees, following the occurrence of serious rape cases. A very carefully controlled series of castration cases was planned under the direction of Dr. Karl Bowman. This was frustrated and stopped by the testimony of several psychiatrists of the

psycho-analytic school, to whom any treatment, including shock, drugs of the phenothiazine type, or surgery, anything except long drawn-out Freudian interview, group therapy, or psycho-dramas, are anathema. This is not to imply that the latter forms of treatment are useless; quite the contrary. They have proved value, but not, I think, in *all* cases of violent sex offenses; these offenders, as I read more and more, seem to be individuals quite apart.[4]

It has become apparent that there is a wide and deep chasm between the two groups in psychiatry, the analysts and the organicists. The former seem to outnumber the latter about three or four to one, and are the ones the courts rely upon to render a diagnosis of insanity. The situation can only be called chaotic, and it is to be hoped it can be brought into a rational equilibrium.

Review of studies in Denmark

While I had early learned of the work of Dr. Georg Stűrup in Denmark, it was Dr. Bowman who suggested that I write to Dr. Stűrup. The latter was most generous in the reprints he sent me, and the letter. I consider him a model for American psychiatry. He has all the good characteristics of both American schools, and none of the narrow-minded irrationality that so besmirches us. His institution is obviously years ahead of anything here. *All* of the attendants are carefully trained and highly educated. He feels that the persons who are most in contact with the convict patients must of necessity have the best insights and skills that can be engendered. The matter of castration for the convicted offender is never broached by the staff. The subject must be introduced by the convict himself. There has been enough said, and enough cases done, so that anyone in Denmark knows of the castration program. Stűrup has stated, "Of the persistent sex criminals in Denmark who have been sentenced to institutions like Herstedevester, less than about ten cases a year are castrated. This amounts to about 300 cases in the last 30 years—about two per cent of those sentenced.[18] "The integration of this surgical treatment and general treatment is especially important. . . ."

It is to be emphasized here, and it will be repeated in quoting other investigators, that castration is not a blanket cure-all for the violent sex-offender. It is to be used in conjunction with the best of general psychiatric treatment in certain very carefully selected cases. The repeated remark of American doctors to me has been, "If it is to be used so infrequently, why use it at all?" This is the typical American psyche, "If it is so good, let's mass-produce it."

One more quotation from Dr. Stűrup which reveals his practical insight, "I have arrived at the view that the legal classification according to the type of act is worth little for estimating future dangerousness." Which means to this writer that our current code of sentencing in the United States is only one of the most irrational parts of our current penal code, and that the indeterminate sentence is one of the most badly needed innovations in our penal system. There were 33 cases of rape associated with very serious criminality, such as murder, in Stűrup's series.[18] These he divides into three rough groups:

1. Sexually deviating persons.
2. Psychopathologically deviating persons.
3. Primitive persons — infantile, exceedingly distinctive culturally, sometimes with certain nervous traits.

Less than half of these serious offenders have been operated upon—16 to be exact. Nine were in the sexually deviating group, all are managing, although some have gone through periods of other crimes; three were in group 2, and one is in custody after other criminality, including arson; while four primitive, infantile offenders are managing, one of them committed a crime for the sake of gain and became depressed as a reaction.

It was Dr. Stűrup who suggested that I read Die Entmannung von Sittlichkeitverbrechern, by Albrecht Langelűddeke.[13] Little did he know how rusty my German had become. But I got out my old dictionaries and went to it (with the aid of an English summary provided with the volume, which I am sure is in error in a major point). The report compares the records of 1,036 castrated offenders against morality with the records of 635 who had not been castrated. The castrates before operation had a record of 84 per cent being recidivists, and the non-castrates only

39 per cent; 57.6 per cent of the castrates had had two or more relapses before treatment, and the non-castrates only 17.5 per cent. Thus the castrates as a group had the poorer prognosis.

A group of 2,405 castrates from the earlier literature had had a relapse rate of 2.7 per cent. The current series of 1,036 cases, plus the 224 Berlin cases of Ohm, had a relapse rate of 2.8-2.9 per cent. This compares favorably with the 39 per cent relapse rate of the 685 non-castrates. This is probably the largest and most definitive study to date.

Bremer reports a follow-up study of 224 Norwegian cases.[2] The main conclusions are as follows: "During the 15 year period preceding 1950, permission to castrate was given in 235 cases. For various reasons the operation was not performed in 19 cases. The castrated sex offenders form only a very small percentage of the total number of sex offenders —about 3 per cent of those sentenced. Hence its importance statistically as an aid in the 'fight against crime' can be practically ignored.

"By far the most satisfactory results were obtained in the case of the habitual sex deviates, including homosexuals, and the oligophrenics.

"In general, castration has yielded poor results in schizophrenic and epileptic psychoses.

"Expert psychiatric study must precede and follow operation. It is a medical task and not a judicial, and must not be modified by the effort to avoid harsh penal sentences or to substitute for lack of accommodations in institutions."

This report confirms Stűrup's point of view. I desire to emphasize that, in my opinion, castration should not be used for any of the sex deviates except the *violent* deviate, certainly not the usual homosexual or child molester, whose lesions are entirely psychological. Those offenders of this type who have mutilated or murdered their victims are candidates, and even then their release from prison is to be weighed very carefully, and after prolonged observation and testing by sodium pentothal and hypnosis.

It is tragic that the California study, which gave every evidence of becoming the most scientifically definitive to date, was sabotaged, and by medical doctors. Their conduct was unbecoming the best in American medicine. •

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A study of maternal-newborn proteins*

Crichton McNeil, MD, Willa Mae Helmick, MT, ASCP, Charles R. Berrett, MT, ASCP, Elmer F. Trentelman, MT, ASCP, and Peter Furgis, MT, ASCP, Salt Lake City†

Prepartum and postpartum maternal serum proteins have been studied electrophoretically as well as their respective newborn cord serums. Maternal serums frequently showed an absolute reduction of gamma globulin without other globulin or albumin alterations. Full term infants had gamma globulin levels averaging the same as normal adults while premature infants demonstrated gamma globulin deficiencies proportional to the number of days premature. The twins in the series also revealed gamma fraction reduction. Those prematures that eventually expired also revealed the lowest gamma globulin levels. It is suggested that premature infants might benefit by gamma globulin therapy upon threat of infection.

THIS STUDY was undertaken to evaluate the major serum protein fractions of maternal serum compared to newborn serum with special reference to the premature infant and twins. Our interest was originally directed toward the alpha$_1$ and alpha$_2$ fractions because it was postulated that an imbalance in these mucopolysaccharide containing portions might conceivably influence pulmonary and brain vascular permeability and, thereby, initiate pathologic changes. Although gross alpha globulin abnormalities did not appear, we wish to report several interesting observations relating to gamma globulin the maternal-newborn relationship near the time of parturition.

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† From the Holy Cross Hospital Research Foundation and Department of Pathology, University of Utah College of Medicine.

Tartarinov,[1] Moore, et al.,[2] Pfau,[3] and Bodman[4] have studied the serum proteins of the fetus electrophoretically and have shown a rising gamma level in the fetal serum as full term development approaches. Combined references suggest that the fetus has the ability to produce an adequate level of albumin, alpha$_1$, alpha$_2$, and beta fractions but that much of the gamma globulin fraction is supplied by the mother across the placenta during the last eight weeks of gestation.[5] Having premature newborns specifically in mind, we wished to investigate their sera for possible protein abnormalities.

Methods

1. Source of cases. Serum samples were collected from mothers whose fetuses were 28 to 32 weeks of gestational development. Another maternal sample was obtained at delivery along with an umbilical cord blood specimen of the fetus. These samples included the premature labor specimens and twins.

2. Control Studies. In order to determine normal protein levels, 30 non-pregnant women between the ages of 20 and 35 were selected to represent a basis for comparison. (See Table 1.)

3. Technique. All serum samples, unless run immediately, were frozen at —20°C. until analyzed. The method used was the Spinco electrophoresis system modified by using wool black stain of 0.1 mg.%, 10% acetic acid in methanol to quantitate the proteins. A serum control pool sample was placed in each chamber to insure uniform quality. A standard deviation was established as shown in Table 1.

Total proteins were run on the Autoanalyzer,* using the Biuret technique methodology of Technicon, and the same control pool

* Technicon Corporation, Chauncey, New York.

TABLE 1

QUANTITATIVE ELECTROPHORETIC PROTEIN FRACTIONS OF NORMAL FEMALES AND HUMAN SERUM POOL CONTROLS

	*Normal Female Controls**		*Normal Human Standard Pool*
Number of Cases	30		16
	Average	*Average*	*2 Standard Deviations*
Albumin	2810 mg.%	3320 mg.%	440 mg.%
Alpha-1	360	360	110
Alpha-2	1150	790	210
Beta	1180	930	150
Gamma Globulin	1564	1330	290
Total Protein	7.0 gm%	6.7 gm.%	0.20 gm.%

* Blood donors' ages 20 to 35 years.

TABLE 2

MATERNAL PRE- AND POSTPARTUM SERUM ELECTROPHORESIS CLASSIFIED AS TO THEIR NEWBORN'S WEIGHT

	Full Term Infant Weight >2,500 gm.		*Premature Infant Weight <2,500 gm.*			
			Survived		*Expired*	
	Pre-Delivery	*Post-Delivery*	*Pre-Delivery*	*Post-Delivery*	*Pre-Delivery*	*Post-Delivery*
Number of Cases	138	142	12	29	5	10
Albumin (mg.%)	2440	2360	2520	2350	2580	2680
Alpha-1 (mg.%)	490	510	500	530	470	450
Alpha-2 (mg.%)	900	1050	890	950	880	890
Beta (mg.%)	1250	1300	1260	1170	1300	1090
Gamma Globulin (mg.%)	1090	1020	1120	1160	1050	1170
Total Protein (gm.%)	6.2	6.0	6.1	6.1	6.8	6.2

sample used in electrophoresis acted as a daily quality control on the procedure.

Results

Table 2 is a representation of maternal sera, before and after delivery, of those women bearing a full term fetus and those having a premature newborn. The level of maternal gamma globulin is of special interest because there is a 500 mg./100 ml. deficit compared to non-pregnant females of comparable age. Taking into consideration the greater maternal blood volume of 27%,[6] this would remain a significant gamma globulin deficit. The maternal serum of those mothers of premature infants also shows the same trend. It should be appreciated that the other serum fractions—alpha$_1$, alpha$_2$, and beta—are only slightly below the control (non-pregnant females), which would indicate an absolute rise considering the high blood volume.

Table 3 gives the range of gamma values in both full term and premature maternal serums. This reveals how low gamma globulin levels may fall without maternal or fetal

TABLE 3

MATERNAL GAMMA GLOBULIN RANGES CLASSIFIED AS TO THEIR NEWBORN'S WEIGHT

	Full Term Infant Weight >2,500 gm.				*Premature Infant Weight <2,500 gm.*							
					Survived				*Expired*			
	Pre-Delivery		*Post-Delivery*		*Pre-Delivery*		*Post-Delivery*		*Pre-Delivery*		*Post-Delivery*	
Number of Cases	138		142		12		29		5		10	
Range	*High*	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*
Gamma Globulin (gm.)	2390	490	1960	390	1160	710	2270	710	1920	120	1830	770

TABLE 4

NEWBORN CORD SERUM ELECTROPHORESIS CLASSIFIED AS TO WEIGHT AND DAYS PREMATURE

	Infant Weight >2,500 gm.	*Infant Weight <2,500 gm. Premature*	
	Full Term	*Survived*	*Expired*
Number of Cases	139	27	8
Albumin	2990 mg.%	2840 mg.%	2740 mg.%
Alpha-1	310	240	280
Alpha-2	610	540	440
Beta	770	760	740
Gamma Globulin	1450	1150	730
Total Protein	6.1 gm.%	5.7 gm.%	5.0 gm.%
Number of Cases	141	29	10
Average Weight at Delivery (gm.)	3487	1956	1644
Number of Cases	141	29	12
Average Days Premature	–2	–34	–42

abnormalities. The lowest maternal gamma level of 120 mg.% occurred in a mother of an expired premature infant compared with a low of 490 mg.% in the maternal serum of a normal full term infant. Occasionally, an actual elevation of gamma globulin was observed but this was unusual. The average postpartum maternal gamma globulin level was slightly lower than the ante partum.

Table 4 emphasizes the rather rapid accumulation of gamma globulin by the fetus in the last few weeks of gestation. Surviving premature infants had an average 300 mg.% less than full term infants and those infants expiring had values of 420 mg.% below those of the surviving prematures. This deficiency seems to vary directly as the number of days of prematurity.

During the study, seven pairs of twins were observed along with their maternal serums. A low gamma globulin level was observed in both maternal and newborn sera in the twin series (Table 5). This result seems to re-emphasize the passage of gamma globulin from mother to infant and indicates that there is a limit to the amount available from the mother since about one half the amount of expected gamma globulin appears in maternal and newborn serums.

Discussion

Taking into consideration the rise in blood volume during the last trimester of pregnancy,[6] our results seem to indicate an *absolute* increase in maternal albumin, $alpha_1$, $alpha_2$, and beta globulins, while gamma globulin levels decline moderately. The *relative* amounts of gamma globulin, however, are

TABLE 5

MATERNAL AND THEIR NEWBORN TWIN SERUM ELECTROPHORESIS STUDIES

	Maternal Sera of Twins		
	Pre-Delivery	*Post-Delivery*	*Infant Sera of Twins*
Number of Cases	2	7	13*
Albumin	2570 mg.%	2430 mg.%	3600 mg.%
Alpha-1	390	530	290
Alpha-2	790	950	480
Beta	1290	1210	730
Gamma Globulin	850	670	750
Total Protein	5.8 gm.%	5.8 gm.%	5.3 gm.%
Number of Cases			14
Average Weight at Delivery (gm.)			2268
Average Days Premature			–36

*One sera hemolyzed and not tested.

decreased and presumably this is due to transplacental passage to the infant. The fetus appears to absorb this gamma globulin in the last weeks of pregnancy as indicated by the difference in premature and full term infant gamma globulin levels. This, then, is one measurable deficiency in premature physiology, and the lack of gamma globulin may well explain why the first weeks of premature life are often precarious.

We have not found a rise of alpha fractions in the premature, and in two hyaline membrane cases observed these fractions were not specifically altered. The results here indicate that treatment of premature infants with gamma globulin might have a definite therapeutic value, especially when there is a threat of bacterial invasion. In those premature infants who expired, gamma globulin levels were only one half the value of the normal full term live infants.

From the standpoint of serum gamma globulin levels, twin newborns resemble premature infants. It is likewise noted that twins are usually premature from the standpoint of time in utero. It appears that they simply do not have the usual length of time to absorb maternal gamma globulin. Apparently only a designated amount of gamma globulin may be transferred across the placenta so that the mother is not completely depleted. Likewise, mothers vary considerably in their ability to produce gamma globulin, but it seems true that actual severe sacrifice of maternal gamma globulin to the fetus occurs as seen in Table 3. One patient demonstrated a level of 390 mg.% gamma globulin with a normal fetal gamma level.

Summary

Maternal-newborn proteins have been studied at prenatal and parturition time intervals.

There is a relative decrease in maternal gamma globulin in the full term pregnancy. Full term infants have been shown to acquire serum gamma globulin levels comparable to normal adults, while premature infants and twins are usually deficient in gamma globulins.

It is suggested that perhaps premature infants and twin newborns might benefit from gamma globulin therapy upon threat of infection.

Alpha protein fractions were not significantly altered in these newborns. •

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Pregnancy and the use of various drugs*

James P. Hartley, MD, Andrew A. Marchetti, MD, and Alexander M. Burnett, MD, Washington, D. C.

What drug to give a pregnant woman, especially in the first trimester, is of concern to patient and physician. Respect for all drugs is indicated.

ASIDE FROM DRUGS such as thalidomide and various cancer chemotherapeutic agents, few other drugs have been conclusively incriminated to produce known and predictable teratogenetic effects. This paper is a discussion of the effects of certain drugs during pregnancy which, while not necessarily teratogenetic, may influence the fetus.

Certain basic considerations of drug therapy in the pregnant patient include the following:

1. There is no safe drug during the first trimester of pregnancy.

2. Certain radiomimetic drugs which produce changes and usually death if given early in pregnancy should never be used except for a life threatening situation.

3. At present there is no experimental model which would help avoid repetition of the thalidomide disaster, for every new drug must ultimately prove itself to be safe in the human animal and not just in the mouse or rat.

As a specific example of toxicity in the newborn which may follow drug administration to the mother, let us consider the effects of drugs on bilirubin metabolism. As is well known, kernicterus results from bilirubin deposition in the basal ganglia of the brain, usually associated with hyperbilirubinemia. The latter may be caused by administration of a drug which acts in one of three ways: 1. The drug displaces bilirubin from its binding site on serum albumin; examples are: a. sufonamides (Wilson 1962), b. salicylates (Wilson 1962), and c. caffeine sodium benzoate (Odell 1959). 2. The drug competes with bilirubin for the conjugation which would detoxify it. The conjugating mechanism in the newborn is immature and may be overloaded, and in the premature it may be even less efficient. Examples are: a. estrogens, b. sulfonamides, c. progesterone, d. aspirin, e. menthol, f. cortisone, and g. chloramphenicol (Wilson 1962). 3. The drug causes hemolysis in a genetically sensitive individual, or in anyone if given in a large enough dose. Glutathione in the reduced state in red blood cells protects cellular hemoglobin from the toxic effect of various drugs, thus helping to prevent hemolysis. Glucose-6-dehydrogenase maintains glutathione in the reduced state (Wilson 1962). Glucose-6-dehydrogenase may be genetically deficient. The following drugs therefore have the potential if given to pregnant patients of causing hyperbilirubinemia in the newborn: a. synthetic vitamin K, b. primaquine, c. nitrofurantain, d. naphthalene, e. phenylhydrazine, f. sulfanamides, g. fara beans, h. acetophenetidin, i. acetyl salicylic acid, j. chloramphenicol, and k. acetanilia. It becomes obvious that there may be complicated backgrounds to relatively straight-forward clinical problems.

Let us turn our attention to some of the commonly used drugs which produce or may potentially produce effects in the fetus when administered to the mother.

* Presented at the 63rd Annual Meeting of the Wyoming State Medical Society, Sept. 1, 1966. From the Georgetown University Hospital. A list of 62 references has necessarily been deleted because of space limitations.

Analgesics

In normal dosage there is no evidence that salicylates affect the fetus. However, when taken for suicidal purposes they may cause abortion, in large doses they may produce neonatal bleeding, and they compete with bilirubin for binding sites on serum albumin and increase the risk of kernicterus. They are more effective than sulfonamides in disassociating bilirubin from albumin.

Acetphenetedin (Phenactetin) when taken over a long period in large doses may produce methemoglobinemia, sulfhemoglobinemia or renal papillary necrosis. Degenerative encephalopathy has been reported in infants born of mothers who had ingested large amounts of this drug.

Antibiotics

There is no convincing evidence that any antimicrobial drug given to pregnant patients has had a teratogenetic effect. However, some specific effects occurring during pregnancy warrant further discussion. Acute fatty liver of pregnancy is characterized by jaundice in the last trimester, coffee ground vomitus, lethargy and coma, premature labor, death often a few days after delivery, hyperbilirubinemia, elevated S.G.O.T., elevated alkaline phosphatase and the morphological findings of many fat-containing vacuoles within cells of the liver with no necrosis and little or no cellular infiltrate. Etiologic factors in addition to pregnancy are 1. large doses of tetracycline, usually intravenous, 2. preexisting nephropathy, usually pyelonephritis, which permits a large amount of the drug to accumulate, and 3. duration or length of antibiotic therapy. Not all patients with this syndrome have received tetracycline but the majority have. Tetracyclines are cholating agents and are incorporated in bone and teeth undergoing calcification. Vivid golden yellow develops when exposed to ultraviolet light. In teeth this is permanent.

Chloramphenicol is inactivated through conjugation with gluceronic acid. Renal excretion of free chloramphenicol is by glomerular filtration. Both of these functions may be less efficient in the newborn. High dosage may lead to gray cyanosis, flaccidity, and cardiovascular collapse. This manifestation has only been reported when administered to the newborn, but the drug is metabolized by the liver and may compete for hepatic enzyme systems involved in bilirubin metabolism and thus lead to jaundice.

Streptomycin may cause deafness and vestibular impairment in the fetus. There are reported cases of total deafness following long term therapy with streptomycin both during the first and second day of pregnancy.

With the long acting sulfonamides (Kynex, Madribon) significant blood levels may be present in the newborn for six to seven days. They should be avoided during pregnancy (Cohlan 1964). The use of nalidixic acid (NegGram) should be avoided since the effect on the fetus is unknown (Medical Letter 1964). Nine mothers received sulfamethoxypridazine (Medicel, Lederkyn, Kynex) because of prolonged rupture of the membranes. All of their infants developed jaundice. In three of the babies this was noted on the first day of life. In four infants the serum bilirubin climbed above 18 mg. per cent and two babies required exchange transfusions (Dunn 1954). Fifty-four mothers were given sulfadiazine (0.5 gram twice a day) during their pregnancies as prophylaxis against rheumatic fever. They delivered a total of one hundred infants. There was no increase in the incidence of prematurity, hyperbilirubinemia or kernicterus (Morgan, Wenber 1965).

Cancer chemotherapeutic agents

These drugs are usually employed in the treatment of leukemias and lymphomas. In a 1960 review of the literature, Sokal and Lessman reported twenty-one cases in which chemotherapeutic agents (not counting aminopterin) were employed in human pregnancy. Drugs included were busulfan, 6 - mercaptopurine, desacetyl - methylcolchicine, nitrogen mustard, chlorambucil, triethylenemelamine and urethane. When used alone no major fetal abnormalities were related to alternating 6-mercaptopurine and busulfan throughout pregnancy. They were aware of no reports of important fetal abnormalities in which drugs were used only after the first trimester. Maloney (1964) states that there is no unequivocal evidence of fetal damage due to busulfan therapy alone during pregnancy.

Aminopterin (4-aminopteralyglutamic acid) is cytotoxic and definitely teratogenic in the human. It causes abortion or malformations. There is no constant pattern of malformations. The effect depends on timing and dosage, but it has been associated with cleft palate, harelip, hydrocephalus and meningomyelocele. Folic acid antagonists are strongly contraindicated in pregnancy, at least during the first trimester.

Diuretics

Thiazide diuretics have been associated with thrombocytopenia. The latter has been reported in newborn of treated mothers as well as non-pregnant patients. A recent report listed eleven cases of neonatal thrombocytopenia and other hematologic abnormalities associated with antepartum administration of thiazide drugs. However cause and effect was not proved. In general their administration would seem to outweigh the complications reported.

Ganglionic blocking agents cause a drop in fetal blood pressure and heart rate in animals. They may produce paralytic ileus or neonatal pneumonia and are best avoided during pregnancy. Reserpine has produced severe nasal congestion which clears in one to five days. It may be given safely if the nursery personnel are aware of its prior administration.

Oral hyperglycemics

There have been relatively few reports of the use of oral hypoglycemic agents during pregnancy. At present there is no proof that sulfonureas are teratogenic in man. With the use of chlorpropamide (Dabinese) one study showed an increased perinatal mortality, but the total number of patients was small and other factors may have been responsible. Moss and Connor reported on eleven patients treated at our institution with torbutamide. None of the infants had congenital abnormalities. The two fetal deaths which occurred were not thought to be related to drug therapy.

Progestogens

Numerous derivatives of progesterone have been synethesized and the chemical terminology may be confusing to the nonchemist. When given to a pregnant patient masculinization of the female fetus may occur with the use of any of them. This phenomena was first reported by Wilkins (1958). Studies of sex chromatin and 17-ketosteroid excretion should establish the correct diagnosis. Virilization is limited to the external genitalia (Fine, Levin, McConnell 1963). Masculinization due to hormone therapy may vary from minor degrees of labial fusion (non-adherence), to complete labio-scrotal fusion. The urethra may open at the base of an enlarged clitoris or a more or less penile urethra may be formed (Black 1962). No masculinized female babies have been reported when the progestogens were used as pregnancy tests (Kistner 1964).

There has been no adequate proof that progestational treatment significantly affects the outcome of habitual or threatened abortion (Meester 1964). Reports are inconsistent about the effect of progesterone on the uterus at term (Friedman 1965).

Of the drugs in clinical use masculinization has been reported with norethindrone (Norlutin, Orthonovum), norethyrodrel (Enovid), ethisterone (Lutocylol, Pranone), testosterone and methyltestosterone, and norethandrolone (Nilevar). Masculinization of a female fetus has not been reported after 17-a-hydroxyprogesterone caproate (Delalutin) or medroxyprogesterone acetate (Provera).

Sedatives

Evidence of the teratogenicity of thalidomide is overwhelming (Taussig 1962). The clinical picture is usually symmetrical, affecting the arms more than the legs, absence or shortening of arms, absence of thumbs, abnormalities of fingers, shortening of legs and/or atresia of the intestinal tract (Arena 1964, Black 1962). Even with large amounts it is difficult to make some animals sleepy with thalidomide (Kelsey 1965). Even in retrospect, thalidomide is a relatively safe drug in the laboratory. Disaster in United States was prevented primarily because, inadvertently, the human experiment was being conducted elsewhere in the world (Mellin 1964). Taussig (1962) has written an excellent chronological review of thalidomide. The climax was reached November 1961, when Lenz reported to a scientific meeting that he suspected a drug cause of the great increase in

the incidence of phocomelia in Germany. The suggested incidence has varied from 2 to 20 per cent, and in one report reached 50 per cent. The critical period is from the 27th to 40th day of gestation (Cohlan 1963).

Diphenylhydrontain (Dilantin) when given with phenobarbital may interfere with folic acid metabolism and lead to a megaloblastic anemia of pregnancy. This is easily corrected with the addition of folic acid to the treatment regime.

Smoking

The average birth weight has been found to be less in babies whose mothers smoke heavily (Meester 1964), but the significance of this remains unclear. McDonald and Lanford (1965) reported, in addition to prematurity, an increased incidence of preeclampsia, premature rupture of the membranes, and a decreased incidence of female births among "heavy smokers" (defined as more than ten cigarettes per day). Peterson, Morese and Kaltreider (1965) noted a significant increase in prematurity (both in weight and length of gestation) among babies whose mothers smoked more than eleven cigarettes per day. Apgar scores were found to be the same.

Hormones

In a review of the world literature 260 pregnancies were reported in which cortisone or its analogues were administered. Two of these babies had a cleft palate. Bongiovanni and McPadden (1960) were aware of only two additional cases. Fetal risk, therefore, in the human seems small. Nevertheless, steroids should be given during pregnancy only for treatment of serious maternal disease. It is important to watch for adrenal failure in the newborn, but neonatal hypoadrenalism resulting from maternal cortisone is extremely rare (Wlson 1962), and Bongiovanni and McPadden (1960) found only one in the 260 cases reported.

Infants delivered of mothers who are hyperthyroid and on methylthiouracil, propylthiouracil or methimazole (Tapizole) have occasionally had an enlarged thyroid. A goiter may produce face presentation and respiratory obstruction in the newborn. The mechanism is believed due to increased stimulation of the pituitary gland. This causes increased production of thyroid stimulating hormone and results in hyperplasia of the fetal gland. Iodine given to pregnant patients for reasons other than hyperthyroidism has also produced goiter in infants. In many cases no treatment of the goiter is required. Thiouracil is excreted in breast milk, and thus breast feeding is not advisable when the patient is receiving thiouracil drugs.

The fetal thyroid begins functioning after fourteen weeks gestation. At this time the gland becomes subject to the effect of maternally ingested propylthiouracil (Aaron et al., 1955). Kistner (1964) feels surgery may be the therapy of choice for thyrotoxicosis in pregnancy, but Medical Letter (1963) states that if care is taken to avoid overtreatment propylthiouracil and other antithyroid drugs can be given during pregnancy without serious fetal effect. Maternal thyrotropic hormone probably does not cross the placenta unless it has reached very high levels in maternal blood (Smithells 1963). Bongiovanni et al. (1956) state that during pregnancy it may be desirable to correct thyrotoxicosis only partially with thiouracil drugs. An attempt might be made to withdraw the drug about two to three weeks prior to term, and perhaps use iodine toward the end of pregnancy.

Bongiovanni has been quoted as stating that clinical hyperthyroidism in the baby is rarely seen. Infantile cretinism has been reported after radioactive iodine (Wilson 1962). Radioactive iodine leads to involution of the fetal thyroid and colloid goiter. Hyperthyroid women of childbearing age should not receive radioactive thyroid therapy without first having a pregnancy test.

Other drugs

The anti-coagulants bithydroxycoumarin (Dicumerol) and warfarin have caused fetal hemorrhage and death in humans. They are probably dangerous in human pregnancy. Heparin does not appear to cross the placenta fully, and at present we favor heparin therapy for the initial problem, and if further therapy is indicated we recommend inferior vena cava ligation. We have had three recent

cases treated by heparin and venous ligation early in pregnancy with no obvious effects on the infant.

Because of experimental findings with meclizine in pregnant animals there has been a great deal of concern about the use of this drug in pregnant women. While there is no concrete evidence that it is teratogenic to man its use as an antinauseant is not recommended in early pregnany. It is found chiefly in the propietary drug Bonine.

Quinine in therapeutic dosage likely causes no congenital abnormalities. In very high dosage it may lead to defects of the ear or eye, but there is no evidence that there is an increased incidence of deafness in the malaria areas where quinine consumption is constant and large. Quinidine likely produces changes similar to quinine.

Phenmetrazine hydrochloride (Preludin), appetite depressants, have been implicated in congenital malformations, but there is no positive evidence of its action. A diaphragmatic hernia has been suggested as the possible rebutt of the use of this drug. It is strongly suggested that it not be used during the first trimester of pregnancy.

"Pregnancy, regardless of trimester, should be considered a contraindication to smallpox vaccination unless travel to an epidemic area is planned." (Medical Letter 1965.) However contact with a case of smallpox justifies vaccination. In general with smallpox vaccination, if any effect occurs, there is produced a vaccina infection of the fetus leading to its demise. Medical Letter 1965 also states that "Pregnancy is a contraindication to live measles vaccine."

Summary

A brief discussion of some common drugs and their possible harmful effects when administered to pregnant females has been presented. It is to be hoped that there will soon be available a complete reference index of all drugs and their known influence and effects when given during the pregnant state. •

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Lactation inhibition by norethindrone with mestranol*

Charles W. Nickerson, CDR MC U.S.N., and Virginia O. Berkman, LCDR NC U.S.N., Portsmouth, New Hampshire

These studies show reduction of breast symptoms in patients receiving this hormone to suppress post-partum lactation.

AT THE PRESENT TIME breast feeding is not in vogue at this hospital as only 20 per cent of the patients elect to breast feed. Although potent medications are available to suppress lactation,[1, 3] none were in use at this hospital prior to April, 1965. Since that time a cheap, effective medication has been utilized with good results.

Method

Since April, 1965 each non-breast feeding postpartum patient has received a daily dose of 2 mg. norethindrone with mestranol† for a maximum of five days. When this program was initiated the tablet was administered the morning following delivery regardless of the time of delivery. However, it was observed that if the first dose was not given within 12 hours of delivery, breast engorgement and/or pain was more likely to appear.

Results

All hospital charts of non-breast feeding mothers were analyzed for notations of breast engorgement or breast pain from January 1, 1964 to August 1, 1966. From January 1, 1964 to April 1, 1965 there were 915 non-breast feeding mothers who comprise the control group and who received no medication to suppress or inhibit lactation. Of this group 127 (13.7 per cent) had breast pain or engorgement. The study group who received norethindrone with mestranol comprised 695 patients of whom 36 (5.2 per cent) had breast pain or engorgement. As will be seen in Fig. 1 there was an immediate and reasonably

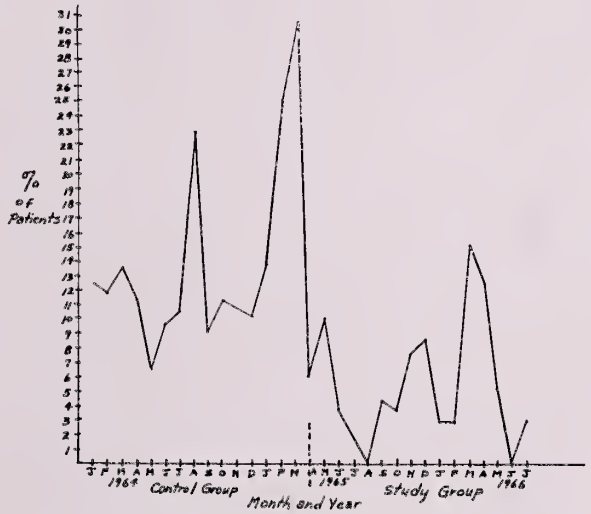

Fig. 1. Non-breast feeding patients with breast engorgement.

*From the Department of Obstetrics and Gynecology, United States Naval Hospital, Portsmouth, New Hampshire. The opinions or assertions contained herein are of the authors and are not official or necessarily reflecting the views of the Medical Department of the Navy or of the Naval Service at large.

†Ortho Novum 2 mg. Ortho Pharmaceutical Corp., Raritan, New Jersey.

consistent reduction in breast complaints since the advent of the medication. At no time were the patients informed that they were receiving medication to inhibit lactation, and there was no use of binders, fluid restriction or other methods of lactation control. There were no side effects (nausea, bloating, headaches, edema, thrombotic phenomena, visual disturbance, or withdrawal bleeding) observed due to the medication.

Discussion

There have been no studies reported in the American literature regarding use of this medication for lactation inhibition. However, this has been reported in the foreign literature.[2] The mechanism by which lactation is suppressed by this drug combination is not known, but it must operate by the same principle that other hormones inhibit lactation.[1, 3] Since we have had a 62 per cent reduction in breast complaints and no side effects due to the drug, we feel that this is a cheap, effective means of suppressing lactation.

Summary

Breast engorgement and/or pain occurred in 13.7 per cent of 915 non-breast feeding postpartum patients not receiving medication to inhibit lactation. These complaints were reduced to 5.2 per cent of 695 patients who received a daily dose of 2 mg. norethindrone with mestranol for five days starting within 12 hours of delivery. There were no side effects observed due to administration of the drug. •

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History of a medical collection housed in the Denver public library 1893-1899*

Marjorie Wannarka, Omaha, Nebraska

Early history of the Denver Medical Society Library and its founders will interest most physicians in the Rocky Mountain area, particularly many who will remember the personalities, and all who patronize this great institution.

IN THE LATE NINETEENTH CENTURY, Denver was the locale of a little publicized episode taken from the annals of the history of this nation's medical libraries. Unlike today, at that time it was not unusual to find a special collection of medical books designed to be used particularly by the medical profession in some public libraries.[1] Denver was a city in which one of the earliest medical collections was located in a public library. Two individuals played prominent roles in the history to be recounted here. One of these individuals was John Cotton Dana, destined to become well known in the library profession. The other, Charles David Spivak, was a physician. Each contributed to the history of the early beginnings of the medical collection which is now known as that of the Denver County Medical Society.

John Cotton Dana

In the Spring of 1893, there were four medical schools in Denver. And the city enjoyed a favorable ratio of one physician for every 250 persons, while the rest of the country had a ratio of only one physician for every 600 persons.[2] Yet the city lacked adequate medical library facilities for its physicians and students. Such a situation was especially intolerable for Dr. Henry Sewall. After discussing the inadequate facilities with the mayor, Sewall decided to seek the advice of his friend and patient, John Cotton Dana. Dana suggested that the doctors form a library association:

> He agreed that if such an association was formed and would deposit its books in the Denver Public Library, the library would catalogue them and care for them as fully as if they were among its own possessions. Furthermore he agreed, in behalf of the library, to spend as much money for the purchase of medical books, as was expended for that purpose by the Medical Library Association. In return for this, the books belonging to the association were to be free to all patrons of the Public Library who wished to consult them there, but were to be lent only to members of the Association, and were to remain its exclusive property.[3]

Who was this librarian, trained in law and employed at times as a surveyor, who expressed such an interest in developing medical library resources in Denver? Why did he become a librarian? Since very few organized courses in library science were offered at that time, Dana had no formal training in librarianship. When Dana's health began to fail, one of his Dartmouth classmates, Frank Wadleigh Gove, urged him to move to Denver where Gove's brother, Aaron Gove, was superintendent of the school system.[4] It was Aaron Gove who recommended

*An excerpt from *Medical Collections in Public Libraries of the United States*, a thesis submitted to the University of Minnesota. The author is Librarian, Creighton University School of Medicine and School of Pharmacy Library at Omaha.

that Dana be appointed first librarian of the Denver Public Library. The library had been established by the School Board and was empowered by the legislature to levy a tax of one-tenth of a mill for the support of the new library.[5]

Dana was highly esteemed by his colleagues. When he attended his first American Library Association meeting in 1891, his capacity for leadership was immediately recognized. Despite the fact that he had not attended a conference previously, he was appointed to the Resolutions Committee and nominated to the Executive Committee. After three years he was elected to the presidency of the Association. In 1908 he was one of those instrumental in establishing the Special Libraries Association and served as its first president.

Dana once characterized himself as being a "philosophical anarchist." Hadley tempers this subjective evaluation by noting that he was an unusual anarchist, "for he opposed, not law and order, but complacency, mental sloth, social irresponsibility, lack of vision, mediocrity and bad taste."[6] The *New York Times* concurred in this judgment:

> He was like a gadfly to stodgy conservatism. He was always calling for a reassessment of old traditions and standards in library work, and was eager to start out on new paths, provided they led to the results he had at heart. Mere red tape in administration was abhorrent to him. He was forever cutting it through and throwing it away, in order to replace it by more direct and simple methods.[7]

This attitude of rugged individualism, of independence of thought, manifested itself early in his professional career. At a time when the value of good public relations was yet unproved, he subjected himself to the criticism of his fellow librarians because he had used every available means to arouse an interest in reading. Parsons credits him with establishing the first children's room in a public library in the nation.[8]

This was the librarian who opened the doors of the Denver Public Library to the medical profession. After the organization of the Colorado Medical Library Association and its agreement with the public library, medical books and journals were donated by the physicians of the area. The University of Denver's Medical Department deposited its collection of 240 volumes and 2,000 unbound journals in the public library; St. Luke's Hospital also contributed to the collection. The following table demonstrates the rapid growth of the collection:

TABLE 1
Growth of the Colorado Medical Library Association's Collection from 1893 to 1898

Year	*Number of Volumes*	*Number of Journals Received*
1893	503	9
1894	1176	45
1895	1718	50
1896	3076	147
1897	4489	148
1898	5322	177

Adapted from Tandy[9]

The phenomenal growth of the collection may be attributed to some extent to the missionary efforts of the Association. Circulars requesting donations were sent to physicians and all interested persons. In response, the Boston Medical Library Association alone donated 2,000 volumes. The Surgeon-General directed that the medical libraries of any military posts which might be abandoned should be given to the Association, and a few generous physician-members provided extra funds when extraordinary expenses arose.

Charles David Spivak

One of the physicians who must have worked closely with Dana was Charles David Spivak, a Russian born graduate of Jefferson Medical College in Philadelphia. History does not record Spivak's reason for moving in 1896 from the culturally well-endowed Philadelphia to the raw-boned frontier life in Colorado, but perhaps he was seeking adventure or better health since Colorado was reputed to offer both.

In October 1897, an article by Spivak appeared in *Medical News* wherein he outlined a plan for the compilation of a union catalogue of all medical publications found in the private medical libraries of a given area.[10] He cites his experience in establishing such a union catalogue for the Colorado Medical Library Association. Each physician who was willing to cooperate was asked to list the books he owned; the complete list was then

placed in the Denver Public Library where it was available for all to consult. Although the medical publications indexed in this union catalogue were neither owned nor housed by the public library, the venture is mentioned here because it is a significant early example of a cooperative effort between the public library and the medical profession to obtain the greatest possible utilization of the medical literature found in a community.

Dr. Spivak demonstrated his literary interests and ability by founding a periodical devoted to and entitled *Medical Libraries.* In his first issue, which appeared in February 1898, he states his purposes in publishing the journal; one of them is, "To encourage the founding of Medical Libraries and Medical Departments in Public Libraries, wherever the medical profession is fairly organized." Even though the journal ceased publication in 1902, it served the profession well during the short period of its existence.

Dark Days for CMLA

Because of political differences with the local authorities, John Dana left Denver for Springfield, Massachusetts, in 1898. With his departure, dark days dawned for the Colorado Medical Library Association. As Sewall wrote:

> During the past year (1899) the Denver Public Library as such has gone out of existence. Its holdings have become added to that (sic) of the old City Library. The enormous labor of recataloging the books of both libraries is now under way and will probably engage the energies of every available member of the staff for a considerable period to come. The new building devoted to the harboring of the combined properties is altogether inadequate in floor space and shelf-room to its purpose. There is little doubt that the loyalty of the members of the medical profession could have been touched by appeals for the Medical Library and money would have been forthcoming to pay transportation upon donations from the East where our friends have always been more than willing to give us of their literary stores. But we lacked actual storage room for new property and there was not a trained hand available to deal with it.[11]

Charles R. Dudley succeeded John Cotton Dana as City Librarian. In spite of the fact that space for 10,000 volumes was promised to the Association in the new library building, the medical collection was never again admitted to or cared for by the municipal library system.[12]

After an auspicious beginning, the progress of the Association was halted. Until 1907 its chief activity consisted of a perfunctory annual meeting.[13] In 1907 the Denver Academy of Medicine was incorporated and assumed ownership of the Colorado Medical Library Association's resources. A further reorganization occurred a year later when the County Medical Society was amalgamated with the Academy. However, the Academy was dissolved in 1912, and the Medical Society became wholly responsible for the collection. The library was thereafter housed in various places until the Denver Medical Society constructed a special building for it in 1954 at 1601 East 19th Avenue, where it is found today. •

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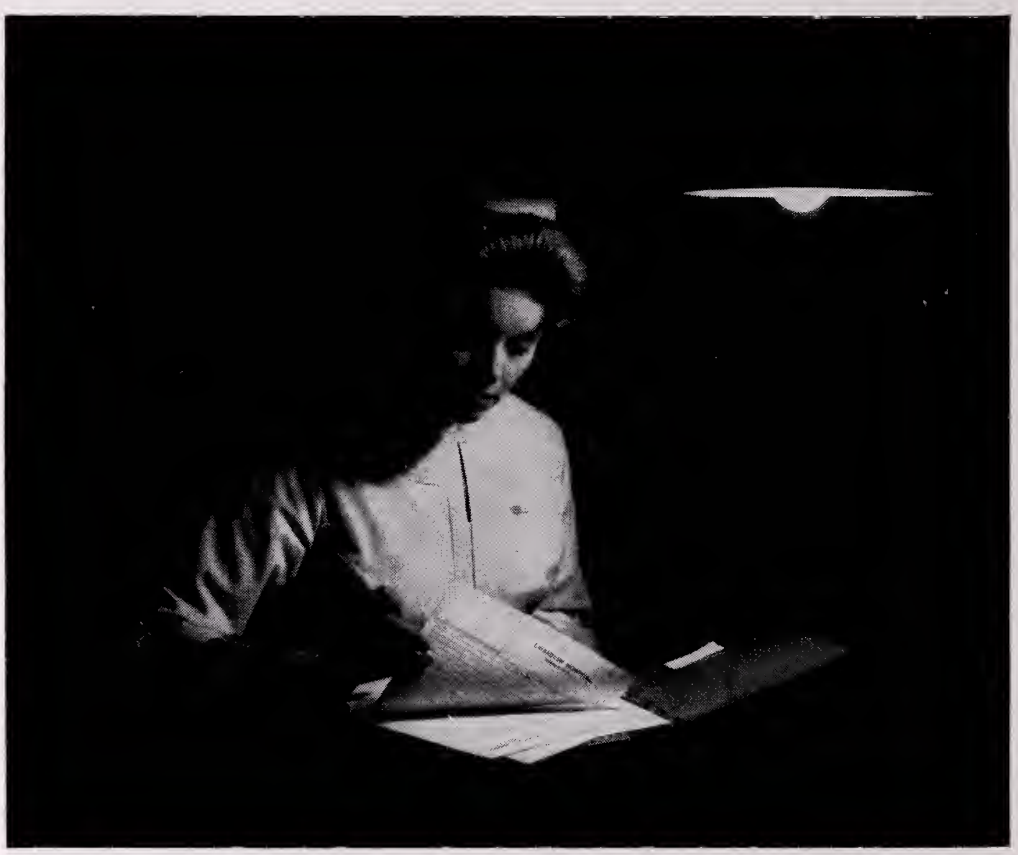

THIS SPACE CONTRIBUTED BY THE PUBLISHER

The anemia and the illness of trauma*

Victor B. Buhler, MD, Kansas City, Missouri

This article reviews some important data concerning post-traumatic anemia and details the relationship of this anemia to fat embolism.

MANY INVESTIGATORS have called attention to an unexplained anemia that frequently follows trauma.[1,2,3,4] This phenomenon occurs not only in patients with open wounds from which there is external blood loss and in patients with closed wounds in which there is tissue swelling to indicate the possibility of blood loss, but also in traumatized patients in whom no clinically detectable blood loss occurs. In those patients who have lost blood externally, adequate blood replacement by transfusion has been determined by utilizing various laboratory methods, including evaluation of the hemoglobin concentration, the hematocrit and the circulating red blood cell mass and plasma volume by various techniques. In those patients with closed wounds and with clinical evidence of hemorrhage, such as limb swelling, blood loss has been evaluated by circumferential measurement of the extremity or by fluid displacement methods. Yet in cases where external or internal blood loss occurs, irrespective of replacement therapy, and in those cases where no blood loss occurs, an anemia frequently develops following trauma that remains unexplained, and clinically detectable hemorrhage, sufficient to account for the blood loss is absent. Topley and Clark[1] have referred to this as the "Anemia of trauma."

The degree of anemia varies, but the hemoglobin values may fall from 2.0 grams to as much as 6.0 grams in a matter of hours. We have noted a fall in hemoglobin as much as 4.0 grams in a 12-hour period.[2] This reduction in hemoglobin may occur precipitously within a few hours after injury, but generally occurs on the second or third day.[1,2,3,4,5] Isotope studies indicate that the circulating red blood cell mass is reduced but that the plasma volume is not altered significantly. The results of these studies, utilizing I^{131} labeled Human Serum Albumin (RISA) have been previously published. There is no change in the mean corpuscular hemoglobin concentration, but the hematocrit falls in proportion to the reduction in the circulating red cell mass and to the fall in hemoglobin levels. Blood transfusions will increase the hemoglobin level and the circulating red cell mass, but generally not in proportion to the amount of blood given. Because of this, the possibility of over-transfusion of these patients exists.

In 1937, Koritschoener and Sophian[6] called attention to the fall in hemoglobin in post-traumatic cases and stated that an otherwise unexplained fall in hemoglobin is due to fat embolism. Other investigators[5,7,8] in enumerating the laboratory findings in patients with fat embolism have mentioned the hemoglobin loss as a diagnostic sign. Since fat embolism increases morbidity and mortality and is a frequent complication of trauma, it is important to call to the attention of those physicians who care for injured patients, that the reduction of hemoglobin is an early diagnostic indication of the existence of fat embolism. Because the hemoglobin may fall precipitously, determinations should be made at least daily.

Fat embolism most frequently occurs after traumatic injuries which involve fractures of the long bones and the incidence increases in proportion to the degree of trauma and

*Presented at 63rd Annual Meeting of the Wyoming State Medical Society Sept. 2, 1966. The author is Victor B. Buhler, M.D., Pathologist, St. Joseph Hospital, Kansas City, Missouri.

with multiple fractures. It may occur following operative procedures involving bone or following manipulation of existing fractures. Reports of fat embolism following external cardiac massage without fracture of the rib cage, injury to soft tissues and abdominal operations, serve to illustrate that fat embolism may occur with minor degrees of trauma and in injuries not involving the bony skeleton. Shenken and Coleman[9] in 1943 first reported the finding of bone marrow embolism to the lungs in a patient with a fracture of the femur. Subsequently, a number of reports have appeared in which the intravasation of bone marrow has caused embolization of the lungs following trauma[10,11,12] with or without fracture, following closed cardiac massage[13,14] and following such diagnostic procedures as intravenous contrast radiography[15] and sternal bone marrow examination.[16] These reports indicate the frequency and the ease that fat and marrow particles gain access to the blood stream. The prevailing view in regard to the pathogenesis of fat embolism is that advocated by Peltier,[5] Pipkin[17,18] and others. These authors are of the opinion that fat globules, or chylons, composed of neutral fat, measuring 15 microns in size or larger, are transported from the site of injury to the pulmonary circulation where at first, they produce a mechanical block. Smaller particles may traverse the pulmonary barrier and embolize the terminal arterioles of distant organs such as the brain, heart and kidneys. Even some of the larger particles, by virtue of their ameboid motion, may traverse the pulmonary barrier. When mechanical block occurs in the lungs, there is slowing of the pulmonary circulation resulting in an increased viscosity of the blood or sludging. This slowing of the circulation reduces the amount of oxygen to the endothelial lining of the pulmonary vessels and increases the permeability of the vessel. The clinical symptoms during the stage of mechanical block are those of shock and include cyanosis, hypotension, rapid respiration, tachycardia and an increase in pulmonary arterial pressure. The hemoglobin value drops and the circulating red blood cell mass is reduced. If massive embolism occurs at this time, an increase in pulmonary pressure may occur which may cause right heart failure and death.

When lesser amounts of neutral fat are transported to the lungs, lipase, produced in the lungs, hydrolizes the neutral fat into fatty acids. Fatty acids are more toxic to the tissues than are neutral fats. Further damage to the pulmonary arteriole results and hemorrhage into the adjacent lung tissue occurs. The associated clinical symptoms include a deepening of the cyanosis, increase in the respiratory rate, and a further reduction in the hemoglobin levels and the circulating red blood cell mass. Serum lipase levels are elevated. There is an increase in the temperature. X-ray examination of the lungs are usually interpreted as pneumonia or interstitial pulmonary hemorrhage. The patient may become drowsy, restless and irrational. These symptoms are due to the chemical phase of fat embolism[5,17] and have been referred to as the illness of trauma.[2,3] Recovery or death depends on the degree of embolism and the extent to which the lungs and other organs are involved.

Fat particles that traverse the pulmonary barrier may cause embolism of the brain which results in coma and death. Postmortem findings include the presence of intravascular fat droplets along with petechial hemorrhage or hemorrhagic infarcts of the brain. Embolization of the kidneys may occur with resultant oliguria or anuria and a terminal azotemia may result. Petechial hemorrhages may be seen in other organs and in the skin.

Briant and Harris,[19] using a quartz rod transilluminating microscopy, have directly observed some of these phenomena in the lungs of rabbits after injection of neutral fats, such as human and rabbit bone marrow, into the venous circulation. According to their observations, the pulmonary arterioles of approximately 70 microns in size, are occluded by the fat droplets with resultant ischemia of the adjacent lung tissue. Blood continued to flow through the terminal arterioles proximal to the site of occlusion. Fatty acids, when injected, fragmented into smaller particles which were able to occlude the terminal pulmonary arterioles with resultant interstitial hemorrhage. This concept differs from the prevailing view of Peltier, Pipkin and others, in that the changes produced by neutral fats and fatty acids may not be entirely due to the differences in their chemical behavior. The effect of fatty acids may be due to the smaller particle size and the smaller of the vessels involved.

The diagnosis of post-traumatic fat embolism is based on the characteristic clinical symptoms and laboratory findings.[20] The

postmortem diagnosis requires the presence of intravascular fat globules, multiple small hemorrhages or hemorrhagic infarcts in the lungs, the brain, the kidneys or in other organs. Ischemic infarcts are the result of mechanical obstruction. The hemorrhagic infarcts may be due either to temporary arterial occlusion with necrosis, followed by re-establishment of the local circulation, or to blood vessel damage as a result of the liberation of the more toxic fatty acids.

The treatment of the anemia, or the illness of trauma, which Pipkin calls clinical fat embolism[2,17] involves prevention of the disease by careful handling of the traumatized patient to minimize the intravasation of fat at the site of injury. Oxygen inhalation therapy, heparin, blood transfusion and digitalization constitute important supportive measures. Weiner and Forsythe[21] studied the pathophysiology of a case of fat embolism and called attention to the hyperventilation that may occur capable of producing hypocapnia and alkalosis. Mental confusion and disorientation were resolved by use of five per cent dioxide and 95 per cent oxygen inhalation. These mental symptoms reappeared after 100 per cent oxygen inhalations, and were again resolved using the carbon dioxide-oxygen mixture. The use of alcohol solutions intravenously, orally and by inhalation, however, in both the prevention and treatment of the anemia and the illness of trauma, is of current interest. Information as to its action is meager. The suggestion that alcohol acts as a solvent of the fat particles does not entirely explain the manner in which it reaches the fat globules in the occluded pulmonary vessels. The therapeutic value, however, has been demonstrated clinically.[2,17]

Case histories of patients with clinical fat embolism have been presented[2,18] in which a reduction in hemoglobin levels and an increase of the serum lipase had occurred. The hemoglobin values returned to their previous levels, while the serum lipase values returned to normal after the intravenous administration of alcohol.

What causes the drop in hemoglobin in the traumatized patient? And where does the blood go? Clinically detectable external blood loss does not take place. Internal blood loss by hemolysis has not been demonstrated. Although an elevation of the serum bilirubin values have been reported, the

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increase is more compatible with the absorption of broken down hemoglobin at the site of injury, rather than intravascular hemolysis. An increase in the total serum bilirubin level from an average of 0.4 mg per cent to 0.6 mg per cent on the first and second postoperative days has been reported in patients operated for non-united fractures. The total serum bilirubin returned to normal on subsequent days. Certainly a greater increase in serum bilirubin levels would be expected in these patients whose hemoglobin values drop two or more grams. Furthermore, the disappearance and survival studies utilizing Cr^{51} tagged erythrocytes does not support the concept of a hemolytic mechanism.

Hemodilution does not account for the hemoglobin loss. In our studies of the blood volume using irradiated I^{131} human albumen (RISA), the plasma volume did not change; it was the red cell mass that was reduced.

It is therefore apparent that neither bleeding, reduced erythropoesis, hemolysis nor hemodilution can explain the anemia of trauma. A temporary failure of bone marrow in the post-traumatic state cannot be postulated as the anemic process is too rapid for bone marrow failure to become effective. To the contrary, Topley[1] has shown that an increased reticulocyte count occurs, which would indicate that the blood-forming mechanism is intact.

The return of the hemoglobin values to their previous levels after the use of intravenous alcohol seems to be of importance. It would indicate that the initial drop in hemoglobin was produced by a diversion of the red cell mass from the systemic circulation and was returned after the administration of intravenous alcohol. The possibility exists that there is either a release of the mechanical block or an inhibition of the chemical phase. There is, however, no valid explanation which, or if either, of these two mechanisms allow for a return of the red cell mass to the systemic circulation.

Summary

An anemia and an illness of trauma occurs which is clinically indistinguishable from fat embolism.

A reduction of the hemoglobin levels and a reduction in the circulating red blood mass is a frequent finding in the early phase of the disease.

An awareness of the anemia and of the illness of trauma should lead to an early diagnosis and reduce the morbidity and mortality of fat embolism. •

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Simple mastectomy --- a subcutaneous approach

Donn D. Thomas, MD, Englewood, Colorado

Enucleation of breast tissue for benign disease need not be a disfiguring procedure. The method herein advocated is designed to avoid psychic trauma implied in loss of a breast.

A FREQUENT AND PERPLEXING PROBLEM encountered by physicians is diffuse breast disease and/or the recurrent development of "lumps" or masses in the female breast. Understandably, this produces concern by the patient, her family and her physician; the latter then becomes responsible for selection of treatment. Of primary interest is the possibility of malignant disease. A series of breast biopsies and mammographic x-ray examinations extends over several years, entailing hospitalizations with anesthetics and other associated expense, both financial and emotional. In cases where all masses cannot be removed by excisional biopsy there is the question whether a residual mass is pre-malignant or malignant. Multiple biopsies can be confusing because of scarring, deformity and contraction, which compound the difficulty in interpretation of clinical or x-ray examinations.

A solution to these problems is often simple mastectomy, either unilateral or bilateral. This procedure is directed toward removal of the breasts, both as treatment and prophylaxis. Decision to do a simple mastectomy is usually after considerable deliberation and hesitation, and not infrequently as a "last resort." This is understandable because it is a mutilating and deforming procedure which is "emotionally charged," though technically easy to accomplish. We, as physicians, are loath to intentionally or unnecessarily amputate any limb or organ. This is as it should be, because the result is seldom a satisfying one. Patients who are candidates for simple mastectomy may refuse or resist the recommendation—sometimes for reasons they do not express. Often there is anxiety and concern about loss of a breast or alteration of "body image." This is a real factor. Also there are social and cultural problems not to be minimized as a source of worry. They are concerned about such things as clothing fitting properly and the need to wear padded prosthetic-type bras. As one patient succinctly described after one simple mastectomy and being advised to have the other breast removed because of benign disease: "No thank you. I would rather have cancer. I already feel like someone's half-brother." This facet of our treatment cannot be ignored and should not be underestimated.

A procedure for selected patients in preference to simple mastectomy is herein described. The method accomplishes three desirable effects. First, it is an acceptable method of treatment; second, it is prophylactic against development of malignant disease; and third, it is a welcome psychologic solution compared to breast amputation.

The procedure consists of simple mastectomy by a subcutaneous route, leaving skin, areola and nipple intact. A substitution of a silastic gel prosthesis is then made for breast mass in the area vacated by its excision. This removes the diseased breast tissue and substitutes a soft pliable material contoured to resemble a normal female breast. The size is determined by the size of the prosthesis.

Indications for subcutaneous mastectomy

Indications for this procedure can be grouped into one fairly large category—diffuse, chronic, benign breast disease. This includes adenosis, fibrocystic disease, ductal

hyperplasia, fibroadenoma and intraductal papillomas. I do not feel that this is the procedure of choice, nor is it indicated, for one or two solitary masses. These can be removed by excisional biopsy rather than this more extensive procedure. However, in those patients who have more diffuse disease or have had previous diagnostic biopsies and who probably will require periodic biopsies, it is logical to consider subcutaneous mastectomy.

Selection of patients

Criteria for selection of patients for subcutaneous mastectomy is not rigid and varies to some degree. Generally, any patient with benign breast disease can be considered, but selectivity must be used on an individual basis. Clinically and radiographically there should be freedom from malignant disease. In my practice, age has varied from 26 through 45. All patients have had one to eight previous breast biopsies histologically benign. All have had pre-operative mammography not indicative of malignant disease. Consideration of family history of malignant disease is necessary, as it is a well established fact that there is an increase of incidence of breast carcinoma in families where previous malignancy has been documented in a mother, sister or maternal aunt. This history cannot be overlooked, for these patients are under greater emotional strain because of uncertainty concerning the exact nature of their problems and knowledge of the family history.

Method

The procedure is done under general anesthetic after adequate and complete preoperative work-up. The surgery is done bilaterally to obtain a symmetrical result. The entire chest is prepared from clavicle to the lower border of the thoracic cage. Palpable limits of the breast are then outlined. Incision is made in the inframammary fold and dissection of the breast begun, first dissecting the breast off the pectoralis fascia along its entire limits of attachment. Subcutaneous dissection is carried out, using as gentle a technic as possible on skin edges. This stage amounts to development of a large skin flap with limited vascularity and, therefore, some compromise to the overlying skin. *Undue surgical trauma at this time can produce an extensive skin slough!* After subcutaneous dissection is complete, the lateral superior and medial attachments of the breast are severed, taking meticulous care to control bleeding points. Without adequate control of hemostasis, hematoma can complicate the postoperative course. After the glandular breast has been completely dissected out and hemostasis achieved, the prosthesis is placed in position where it is allowed to lay directly on the pectoralis fascia. The prosthesis has a fabric back which adheres to the fascia, holding its proper position, obviating slippage or distortion by migration or movement. This incision is then closed in at least two layers. A watertight and anatomic closure is achieved so that dehiscense and subsequent exposure of the prosthesis is avoided. Fine suture and technic is utilized for closure of skin edges to minimize scar. A small Penrose drain is placed in the lateral aspect of the incision for drainage. Dressings are changed on a routine basis, with removal of the drain usually within 48 hours. It is then necessary to restrict the patient's movements and activity during early healing to avoid unusual morbidity and complications of a prolonged postoperative course.

Results

Results of this procedure have thus far been gratifying both to patient, family, and surgeon. Pre-operative and postoperative photographs of typical cases are presented for evaluation. Patient A represents a 36-year-old woman who had had six previous breast biopsies over a three-year period for diffuse nodularity. She was referred for subcutaneous mastectomy after previous recommendations that she have bilateral simple mastectomies. Pathologically, she had both fibrocystic disease and sclerosing adenosis of the breasts; no malignant disease noted.

Patient B, a 32-year-old lady, is of interest because previously she had had simple mastectomy on the right for benign breast disease and was under consideration for simple mastectomy on the left. She was concerned and hesitant to have the procedure and was referred for consideration of subcutaneous mastectomy. In addition, she requested that

Fig. 1a. Pre-surgery.

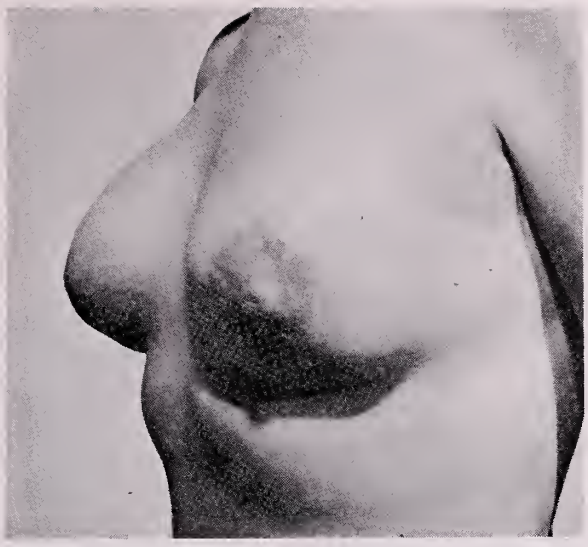

Fig. 1b. Postoperative, subcutaneous mastectomy

Fig. 2a. Pre-surgery.

Fig. 2b. Postoperative, subcutaneous mastectomy with silastic implant. The original scar was ignored.

"something be done about the other side." Subcutaneous mastectomy was carried out on the left for fibrocystic disease. On the right, the old operative incision was opened, and with appropriate development of skin flaps, a subcutaneous implant was put into position. No attempt at revision of the old surgical scar was made at this operation. Both patients have shown acceptable results, both emotionally and cosmetically pleasing. They have returned to full activity, have no residual pain and are relieved of further concern about development of malignant disease.

Summary

A method is described for removal of the female breast for benign breast disease with the implantation of an acceptable soft contoured prosthesis. The method is advocated to avoid disfigurement and mutilation of simple mastectomy, which might otherwise be considerable. Experience has shown this to be physically and psychologically a desirable and beneficial procedure. •

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HEADQUARTERS HOTEL for the Conference is the Brown Palace Hotel. A block of rooms has been reserved for physicians and their families. To make your reservations, write to the Brown Palace Hotel, Denver 80202.

Friday, July 14

9:00 a.m.—Welcome
MYRON C. WADDELL, M.D., President, Colorado Medical Society; N. PAUL ISBELL, M.D., President, Colorado Division of American Cancer Society; ASHBEL C. WILLIAMS, M.D., President, American Cancer Society

9:30 a.m.—Symposium: **"What's New in Cancer"**
Moderator: ROBERT A. HUSEBY, M.D., PH.D., American Medical Center, Spivak, Colorado
Participants: ARTHUR J. HUNNICUTT, M.D., Chief of Surgery, Highland General Hospital, Oakland, California; WILLIAM T. MOSS, M.D., Director, Therapeutic Radiology, Chicago Wesley Memorial Hospital; RICHARD J. REITEMEIER, M.D., Internal Medicine and Gastroenterology, Mayo Clinic; WILLIAM O. RUSSELL, M.D., Chief of Pathology, M. D. Anderson Hospital and Tumor Institute, Houston; W. M. STANLEY, PH.D., Virologist, University of California, Berkeley; and ASHBEL C. WILLIAMS, M.D., Surgeon, Jacksonville, Florida

12:15 p.m.—Luncheon
"Studies on Virus-Cancer Relationships"
W. M. STANLEY, PH.D.

2:00 p.m.—**"Transduodenal Exploration of the Common Duct"**
ARTHUR J. HUNNICUTT, M.D.

2:25 p.m.—**"Combination of Radiation Therapy and Surgery in the Treatment of Cancer"**
WILLIAM T. MOSS, M.D.

2:50 p.m.—**"Cancer Chemotherapy in Gastrointestinal Adenocarcinoma"**
RICHARD J. REITEMEIER, M.D.

3:30 p.m.—**"Uses and Application of Frozen Sections in the Early Diagnosis of Cancer"**
WILLIAM O. RUSSELL, M.D.

3:55 p.m.—**"Early Diagnosis of Cancer of the Colon and Rectum and the Role of Sigmoidoscopy and Barium Enema"**
ASHBEL C. WILLIAMS, M.D.

Saturday, July 15

9:00 a.m.—Greetings from the American Medical Association, MILFORD O. ROUSE, M.D., President

9:15 a.m.—Symposium: **"Cancer of the Biliary System and Its Related Structures"**
Moderator: WILLIAM R. WADDELL, M.D., University of Colorado, Denver
Participants: DRS. A. J. HUNNICUTT, W. T. MOSS, R. J. REITEMEIER, and W. O. RUSSELL.

12:15 p.m.—Luncheon
Presiding: KENNETH C. SAWYER, M.D.,
"Medical Care of Tomorrow"
MILFORD O. ROUSE, M.D.

2:00 p.m.—An **"Information Please"** Session with guest speakers participating
Moderated by:
ALEXIS E. LUBCHENCO, M.D., Denver

4:00 p.m.—Adjourn

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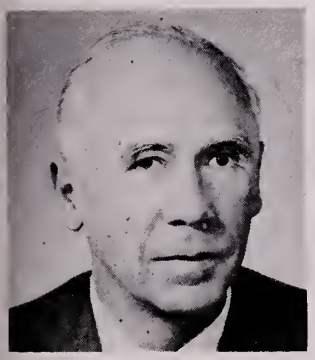
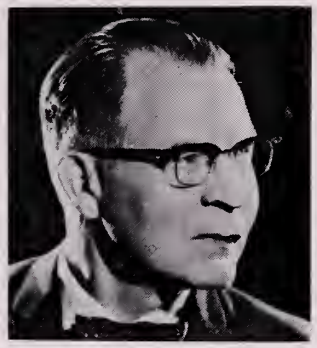
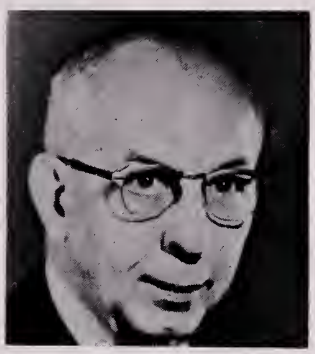


ARTHUR J. HUNNICUTT, M.D.
Oakland, California

ASHBEL C. WILLIAMS, M.D.
President,
American Cancer Society



WILLIAM T. MOSS, M.D.
Chicago Wesley
Memorial Hospital



MILFORD O. ROUSE, M.D.
President, American
Medical Association

RICHARD J. REITEMEIER, M.D.
Mayo Clinic

WILLIAM O. RUSSELL, M.D.
Houston, Texas

W. M. STANLEY, PH.D.
University of California

Look how many ways

Thorazine®

brand of

chlorpromazine

can help

	Tranquilizer	Potentiator	Antiemetic
Agitation	●		
Alcoholism	●		●
Anxiety	●		
Cancer patients	●	●	●
Severe neurodermatitis	●		
Drug addiction withdrawal symptoms	●		●
Emotional disturbances (moderate to severe)	●		
Nausea & vomiting	●		●
Neurological disorders	●		
Obstetrics	●	●	●
Pain	●	●	●
Pediatrics	●	●	●
Porphyria	●	●	
Psychiatric disorders	●		
Hiccups—refractory	●		
Senile agitation	●		
Surgery	●	●	●
Tetanus	●	●	

'Thorazine' is useful as a specific adjuvant in the above named conditions.

The following is a brief precautionary statement. Before prescribing, the physician should be familiar with the complete prescribing information in SK&F literature or *PDR*. *Contraindications:* Comatose states or the presence of large amounts of C.N.S. depressants. *Precautions:* Potentiation of C.N.S. depressants may occur (reduce dosage of C.N.S. depressants when used concomitantly). Antiemetic effect may mask other conditions. Possibility of drowsiness should be borne in mind for patients who drive cars, etc. In pregnancy, use only when necessary to the welfare of the patient. *Side Effects:* Occasionally transitory drowsiness; dry mouth; nasal congestion; constipation; amenorrhea; mild fever; hypotensive effects, sometimes severe with I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosage (in rare instances, may persist); weight gain; miosis; lactation and moderate breast engorgement (in females on high dosages); and less frequently cholestatic jaundice. Side effects occurring rarely include: mydriasis; agranulocytosis; skin pigmentation, lenticular and corneal deposits (after prolonged substantial dosages).

For a comprehensive presentation of 'Thorazine' prescribing information and side effects reported with phenothiazine derivatives, please refer to SK&F literature or *PDR*.

Smith Kline & French Laboratories SK&F

UTAH

Minutes of the House of Delegates, Utah State Medical Association

Tenth Interim Session,
Salt Lake City, Utah
March 22, 1967

The Tenth Interim Meeting of the House of Delegates, Utah State Medical Association, was called to order at 9:10 a.m. on Wednesday, March 22, 1967, in the Lafayette Ballroom of Hotel Utah, Salt Lake City, Utah, by the Speaker of the House of Delegates, J. Clare Hayward, M.D.

Invocation given by Charles Hyde, M.D.

Minutes of the September 20-21, 1966, session which were printed in the December, 1966, issue of the Rocky Mountain Medical Journal were approved.

Report of President—
Paul A. Clayton, M.D.

Since last December we have been pleading with the doctors of the State to start charging all patients their usual and customary fee. In some cases this may be closer to the 1963 Utah Relative Value Studies. In other cases this may be closer to the new 1966 Relative Value Studies. In either case, we have a strong position to support in our usual and customary standards.

In a recent report from HEW on the rising cost of medical care, a careful study of the report reveals that the physician is pretty much justified in whatever increase in professional services has occurred. Medicare, says this report, pays customary charges, which it defines as the fee physicians charge most of their patients for a service. The average fees of physicians increased beginning July 1, 1966, inasmuch as Medicare pays the customary charge. Before Medicare, says the report, many of the aged were paying charges lower than the customary charge to the physicians' regular patients. Therefore, the report said, many aged persons will now find that they are being charged more for a given service by their physician since their physician is now charging them the same fee he charges to the majority of his patients. As you can readily see from this report, the government agency is defending our usual charge philosophy. Under this philosophy, it becomes the individual doctor's prerogative to adjust his fees upward or downward as he sees the need.

Once again I ask you to in turn ask the doctors you represent to use this new schedule only as a reference point and as a list of procedural codes to identify what you are charging for; however, in making your charges use your usual and customary fees to all patients, state and federal government agencies, welfare and charitable agencies, and Blue Shield and commercial insurance carriers. We may not get paid this fee to begin with, but over a period of time we will attain this goal.

I would next like to comment briefly on welfare matters. We, as an Association, have tried to maintain a consistent approach to our welfare problems. We have opposed the extension of welfare medicine to an ever-increasing number of recipients. We feel it is extravagant and unnecessary. However, if the state and federal governments insist on extending care to more and more people at a time when unemployment is at an all-time low and prosperity at an all-time high, then the doctor will expect to be reimbursed on his usual fee basis, the same as the many other businesses and agencies the state must deal with in the private sector of the economy, including its thousands of employees. If, on the other hand, we are expected to furnish our services on a charitable or semi-charitable basis, the doctor will expect to deal directly with his patient or his family as he has always done and not through a welfare department or other government agency which takes the credit for what he does and in many cases tells him what he can do and how he is to do it.

Resolution No. 3, submitted by USMA's Board of Trustees, pertains to the use and control of federal funds. The amount of federal money available for study and implementation of most any facet of medical care, as long as it purports to improve existing care or more especially extend care to areas or people not now enjoying the care to the same full extent as others, is simply amazing. Some of these funds must be matched on a ten, twenty or fifty per cent basis. Some require no matching and are outright grants. There are several agencies involved from the National Institute of Health to the Office of Economic Opportunity. There is real concern on the part of the American Medical Association that unless we maintain constant vigilance and supervision, these funds can be used by others to promote programs not in the public interest and certainly not in the doctor's interest. As a medical association we do not believe we should take over and manage any of these programs, but we do feel that since we as doctors know more about the medical problems than anyone else, we should assume leadership in coordinating these programs. The money is going to be used, and we desire to see that it is used in the best interest of the people.

There has never been a time before when medicine was faced with as many and so acute problems. It behooves every one of us to become involved and stay involved, and show the people of this State that we are the guardians of the health of the citizens of Utah.

Report of Executive Secretary—
Mr. Harold Bowman

Senate Bill 235 has just been signed into law by the Governor. The most significant part of this bill is that it consolidates many of the health services; the most significant item to us is the transfer of Title XIX from the Welfare Department to the Department of Public Health. This is something we have worked for for a number of years and have finally achieved.

Another piece of legislation that passed is for a bill to make a so-called island of the University so that the University can employ people of eminence that do not have a Utah license. This includes both foreign graduates and graduates from other states. They will not be permitted to practice medicine in the State, nor will they be permitted to open an office, but they can act as professors in teaching capacities.

It was for the most part a good year for medicine in the Legislature, and I would like to pay tribute to two physicians, Senators Rees and Call. Both of them did yeoman service in behalf of the medical profession. Their opinions were highly respected in the legislative halls.

Report of Dean of Medical School—
Kenneth B. Castleton, M.D.

The time has come when I feel we should take another look at our present rules and regulations regarding private

practice of our faculty. Our present rules and regulations were self-imposed by our faculty and approved by the Board of Regents in 1946. This permitted limited private practice by members of our faculty provided these activities did not interfere with their prime function of teaching and research, and provided the patients were referred to them. This system has worked very well over a period of years. The number of objections and the amount of criticism has been relatively low. However, one reason that it has worked well is that our surgical department has never been a major problem, and this has been the source of trouble in most of the medical schools where problems have arisen. However, the recent trend is more and more towards the strict full-time system, or to some modification of it. According to this system, the members of the faculty are paid a salary and are not permitted to supplement this by private practice. This does not mean that they can't do private practice—they can on referral, but the funds do not accrue to their personal benefit, but rather go to the benefit of the institution.

There are many things to be said for and against this system. I am not saying we should effect this change, but one of the problems associated with this system is that higher salaries are required. In our institutions we haven't been in a position to pay salaries that are commonly paid in other institutions that work under this type of system. However, in other institutions that have inaugurated this system, private work has increased because it has been found that doctors in private practice are more likely to refer patients if the funds go to the institution rather than to the physician. These funds have amounted to a considerable sum, and it is possible to pay higher salaries by the funds that are accrued to the medical school.

Another modification is that we could pay a salary and then permit our doctors to supplement it to a certain level. Anything over and above this limit would then accrue to the medical school. At any rate, I feel that the matter should be thoroughly reviewed to see if some change should be considered.

The second point I want to make is that medicine in general, and our school in particular, is taking a greater interest in community affairs. I think we should do this. We have been derelict in the past in not doing this. We have restricted our activities and our interests to the "ivory tower" and we haven't taken the interest in the community activities and medical problems of the area as we should. However, we are now being forced to do this by much of the newer federal legislation, including the regional medical program, the mental retardation and mental health bills, and the comprehensive planning act. Many medical educators do not feel that it is proper that medical schools should do this. They feel that we should remain in our own institution and that we should let the rest of the world go by. We do have a limited faculty, and we can't dilute their activities to the point where the effectiveness of our faculty would be impaired in the teaching and training of medical students and graduate students. However, I for one feel that we do have an obligation to the community, and I think that we should take our rightful role and our voice should be heard in many of these other activities. When we do this, we must work with other organizations, and particularly with the state and county medical societies. I think we are going to need a far greater, better communication than we have ever had before. We should also have a far closer cooperation and communication with the State Health Department because of these federal programs. So, we do have both an opportunity and an obligation to do this, and I think that you will find in the next few years we will accept this responsibility more than we have in the past. We solicit your cooperation. We are grateful for the help you have given us over the years. We are trying to do a job at times under adverse circumstances and in the face of many roadblocks, but I think that over the years the medical school has done a remarkable job. A school has been developed that has a great deal of stature, and I am constantly reminded of this in our recruitment of key faculty people who are inevitably impressed, and I think sincerely so, with our physical plant and particularly with the quality of our faculty. It is the faculty that makes the school, and I think it is remarkable that a State of this size has been able to develop a medical school of this stature. The only way we have been able to do it is by the dedication of the people on the faculty and by our ability to attract more than the usual amount of out-of-state funds.

Report of the AMA Delegate—
Drew M. Petersen, M.D.

The Twentieth Clinical Convention of the AMA was held in Las Vegas, Nevada, November 27-30, 1966. Dr. Charles Hudson, President of the AMA, opened the session of the House with a statement that the need to improve existing services and establishing new services for the population should be a top priority for the medical profession. He proposed that the AMA as well as state and county medical societies launch a continuing program for all persons regardless of age, race, creed or color, and he emphasized that it is among the needy and indigent that we must show interest, initiative, and enterprise.

One of the major items brought up at the convention was Education for Family Practice. This is to encourage the development of new programs for the education of large numbers of family physicians for the future. Careful attention should be given to factors which will make the environment for family practice more favorable and serve as incentives to medical students and young physicians to enter this field.

Public Law 89-97 came up for considerable discussion. The House adopted a resolution urging that the AMA advise the Department of HEW that the present requirements for certification and recertification have proven quite objectionable and really unnecessary. They felt that when a patient is admitted to the hospital it should be sufficient evidence alone that this patient needed hospitalization and wasn't put there in poor judgment.

The prescribing of drugs came in for a little discussion, and I would like to quote what the AMA has to say:

"The present policy of the AMA is that physicians should be free to prescribe drugs generically or by brand name for all of their patients, whether they are paying, Medicare, or indigent patients—the primary consideration being the best interest of the patient. Medical considerations must be paramount in the selection of drugs. In addition, the physician also has an obligation to be mindful of the economic consequences of the treatment he prescribes."

A few remarks were also made concerning the choice of laboratories. There has been a great deal of discussion about laboratories which are not headed by qualified M.D.'s. There are some laboratories that are probably good ones, and some that are not, but this is what the Judicial Council has to say on this particular point:

"Medical considerations, not cost, must be paramount when the physician chooses a laboratory. The physician who disregards quality as the primary criterion, or who chooses a laboratory because it provides him with low cost laboratory services on which he charges the patient a profit, is derelict in not acting in the best interests of his patient. However, if reliable, quality laboratory services are available at lower cost, the patient should have the benefit of the savings."

There was a statement also put out on chiropractic which I would like to read to you, inasmuch as the AMA has taken a definite stand on this:

"The position of the medical profession is that chiropractic is an unscientific cult whose practitioners lack the necessary training and background to diagnose and treat human disease, and it also pointed out that decisions by the nation's highest courts justify the medical profession's educational program of alerting the nation to the public health threat posed by the cult of chiropractic."

Payments for professional services also came up for considerable discussion. One point I would like to read states:

"It is proper for a physician who provides personal supervision and direction for a physician-in-training to charge for the professional medical service rendered." This has always been a bone of contention as to what you should do if you allow a resident or an intern to suture or do a spinal puncture, or whatever the procedure may be. It is perfectly ethical for the physician if he supervises the procedure to send in a reasonable or usual fee for this service.

Some awards were made to the American Medical Association's Education and Research Foundation. Merck Sharp and Dohme again contributed one hundred thousand dollars. Some of the other medical associations such as California donated two hundred seventy thousand dollars; Illinois, one hundred eighty-five thousand, and our state almost thirteen thousand dollars and I think we should be justly proud of this contribution.

Again, it has been my privilege to serve as your delegate to the AMA; I consider it a real privilege, and the work on committees within the AMA—the Council on Medical Service, the Committee on Medical Facilities, and several others—has been most rewarding.

Report of the President to the Woman's Auxiliary —Mrs. Frank Daughters

This year legislation has been one of our main undertakings. Each county has reported that at least 50 per cent of their members have worked actively during election time. These women worked at headquarters, solicited funds, and secured speakers for groups, and also helped at the polls.

Our Benevolent Memorial Loan Fund has helped medical and para-medical students to pursue their studies. This is a self-supporting fund made from contributions given in memory of deceased friends and relatives of our doctors. There are now ten deserving students receiving these loans.

Community service throughout the State comprised much of our Auxiliary work. Doctors' wives took leading rolls in PTA, hospital volunteer work, scout leadership, Red Cross and community organizations. Cache and Utah Counties conducted an amblyopic clinic. Weber County distributed hundreds of health pamphlets to the schools. Southern Utah County, with its small membership of auxiliary members, reported more than 1100 hours of service work done by their women. They worked in the Bloodmobile, Cancer Drive, PTA, churches, Literary League, Scouts, and many other worthwhile endeavors. Salt Lake County has collected 200 pounds of good used clothing for the YWCA Youth Program for underprivileged teenage girls. Fourteen women donated time to Project Headstart this summer. Two nurses' assistants and two clerical workers keep regular hours at the Neighborhood House. The most recent accomplishment in Salt Lake City was the distribution of a book concerning child molesting, "The Cautious Twins," to all first, second and third grade children in the area.

Health careers has indeed been a bustling committee. In February at the Mount Ogden High School in Ogden, the Weber County Auxiliary, under the sponsorship of the Medical Association, held a whole day program on health careers for secondary education students. Our other counties were so impressed with this undertaking, which was two years in planning, that they are planning similar endeavors for next year.

Salt Lake County once again donated prizes of gift certificates at the annual Science Fair. Cache County helped with the programming and activities for the Future Nurses Club, and Utah County distributed health booklets and showed films at the high schools.

Scholarships and donations to many health career and other health related groups create good public relations. Cache County this year gave a scholarship gift to a nursing student. Weber County gave two $150 nursing scholarships and sent Weber College $250 to be used in para-medical career scholarships. Salt Lake County presented two $200 nurse scholarships, and Salt Lake County's other contributions included money for Science Fair prizes and money for the Children's Service Society at Christmas.

Histories and biographies are a project worked on with great pride. We keep an early history of our Auxiliary up-to-date, and collect biographies of doctors who have lived and practiced medicine in Utah. At the present time the history of four doctors is being written.

Our 1966-67 Auxiliary year has been very busy and very gratifying. Each of our county organizations reported that great progress has been made in community work and each individual member felt that she had helped in some way to support our pledge, "I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."

Report of the Field Representative to AMA— Mr. Dallas Whaley

I would like to give a brief report on Public Law 89-749, which is the comprehensive medical planning program for the Public Health Service that passed the 89th Congress last year. The State Public Health Department and other state agencies are receiving federal funds for various project grants, and these funds are given by the federal government for specific purposes. To name a few would include mental health, venereal disease control, migrant labor, and sanitation problems. As a new law, the regulations are being drafted and requests for appropriations should be coming through within the next few months. According to testimony given during the hearings of this bill, it is anticipated that by 1972 this program will be five times the amount of money that is currently going to the states. This money will be given over to the decision of a council, and this council will be composed of people from the state—drawing upon present private and public agencies, persons who are interested in community health, etc. By law the majority of members on this council must be consumers of medical care. If physician members on the council are in the minority, and are placed in the category of persons ciassed as vendors of medical care in the hospitals—the nurses, medical technicians, pharmacists, osteopaths, chiropractors, etc.—and this voice of medicine becomes relatively wee and small, then it is very important that this wee small voice of medicine be one that can "beller like a bull." Once the appropriations are determined, either your governor or your public health department is going to determine who this council is to be, and following that these people will be spending probably between $50,000 and $60,000 this year in various health areas in the State. This is planning money—money to be used to determine where the needs are in your State to bring in future federal funds for the action phase of the program. This program can either be completely out of hand, or can be an actual value to the State—a lot depends upon the persons who are appointed to this council, so you will want to consider carefully who these people are. You will want to consider a physician who can meet the needs as they arise on this council, and one who can stand up and give medicine's side of the story, because you have to keep in mind that there may be only one physician on this board. Again, you will need to acquaint the community with the law. You will be hearing a great deal more about this as your appropriations and regulations come out.

President's Written Report

This report was accepted by the House, with emphasis on the statement that medical care not be denied to anyone regardless of race, color, creed, or ability to pay. Emphasis was also placed on the statement that USMA is opposed to any state agency deciding a physician's fees.

Advisory Committee to the Woman's Auxiliary Report

The Reference Committee recommended approval of this report, with emphasis on the last paragraph which requested the State Auxiliary, in cooperation with the County Auxiliaries, to survey and study various depressed and slum areas throughout the state to see if they can be identified and delineated geographically. Further studies would then be needed to see how medical services could be brought to these areas.

Delegate to the AMA Report

This report was approved by the House, with commendation to the AMA Delegate, Drew M. Petersen, M.D., for the fine work done. Doctor Petersen's comments on the Report of the Ad Hoc Committee on Education for Family Practice referred to the Education Committee of USMA for their perusal, comments and recommendations.

Woman's Auxiliary Report

The Reference Committee recommended approval of this report, with commendation to the Woman's Auxiliary for the excellent work accomplished.

Secretary's Report

This report approved by the House, with recognition given to the high calibre of physicians scheduled to appear before USMA's 1967 Scientific Sessions.

Blue Shield Report

Reference Committee recommended adoption of this report, with a plea to the splinter groups who have broken off from the Blue Shield plan that they support the Blue Shield program.

Editor, Utah Section, Rocky Mountain Medical Journal Report

The Reference Committee recommended adoption of this report, with a plea that more papers be submitted from members of the Utah State Medical Association.

Medical-Legal Committee Report

The Reference Committee recommended approval of this report, with a request that additional information be given to the House of Delegates, and perhaps to all members of the State Association, in regard to a statistical study as far as medical-legal problems are concerned. It was felt that members of USMA should know how many cases are brought up for adjudication, how many cases are actually settled out of court, how many are taken to court, and the results from that litigation.

Nursing Liaison Committee Report

This report was approved by the House after further clarification from George H. Curtis, M.D., on areas needing better coordination and supervision from the medical profession, which include: nurses starting intravenous therapy, and adding medications to the intravenous fluid; nurses performing sterile vaginal examinations; oxygen and inhalation therapy given by nurses; intensive care units operated by nurses; and nurse resuscitation of patients.

Medical Economics Committee Report

The Reference Committee recommended approval of this report, with commendation to the chairman, O. Wendell Budge, M.D., for the thorough and informative report he submitted. A further recommendation was made that members of USMA should be informed every six months of any change in the cost-of-living index.

Cancer Committee Report

Approval of this report was recommended by the Reference Committee, with emphasis placed on the fact that physicians permitting use of patients' names relative to regional, state or local tumor registries legally would not be violating the patient's right of privacy.

General Committee on Public Health Report

Approval of this report was recommended by the Reference Committee, with further clarification on the meaning and implications of the multiphasic screening program.

Nursing Home Liaison Committee Report

The Reference Committee recommended approval of this report, but urged that future reports be more informative, particularly with regard to problems facing nursing care facilities.

Fee Schedule Committee Report

This report's approval was recommended by the Reference Committee, with commendation to Scott M. Smith, M.D., chairman, for the excellent work he has done, and a request that delegates consider the individual points of his report carefully.

Disaster and Civil Defense Committee Report

The Reference Committee recommended approval of this report, with the admonition that communities throughout Utah who do not have a medical self-help program take steps to see that such a training program is instituted.

Report of the Box Elder County Society

This report was approved by the House, with commendation to this Component Society for the excellent report, as well as for implementing a standardized health form for various youth activities in that community.

Central Utah Medical Society Report

Approval of this report was recommended by the Reference Committee, with further clarification on the bank credit card plan referred to in the report.

Southeastern Utah Medical Society Report

The Reference Committee recommended approval of this report, with commendation to Jerrold C. Smith, M.D., for his informativeness on various activities within his Society.

Southern Utah Medical Society Report

The House approved this report, also with commendation for its excellence.

Other reports and matters were discussed in considerable detail. Several resolutions were presented to the House, two of which were approved as follows:

Use and Control of Federal Funds

WHEREAS, due to the largesse of the federal government large sums of money have been made available for study and implementation of programs for all phases of medical care, and

WHEREAS, this has already created some confusion among medical and para-medical groups as to who should apply for and control these funds, and

WHEREAS, such confusion is not in the best interest of the public we serve,

NOW THEREFORE BE IT RESOLVED, that it be the expressed policy of the Utah State Medical Association that when medical projects for study, planning, group treatment, or research involve broad segments of a community, county, or the state as a whole the coordination of such projects should be either by the component medical society in the area involved or by the Utah State Medical Association.

Assistants' Fees

WHEREAS, it is an established ethical practice that a physician should charge and be paid according to the services he has rendered rather than receive a gratuity or "split" in the amount paid to another, and

WHEREAS, it is a well established modality both in the surrounding states, especially on the West Coast, and also in the State of Utah as outlined in the Industrial Fee Schedule, and

WHEREAS, the Blue Shield and Utah State Medical Association have outlined the payment of assistants' fees in the relative value study but have never implemented this isolated portion, and

WHEREAS, other assistants to the surgeon in the team effort necessary to perform modern surgery, such as Anesthesiologists, Internal Medical Consultants, Pathologists and Radiologists are paid according to the services they render, and

WHEREAS, even Interns and Resident staff physicians are paid indirectly through increased hospital day rates made necessary by their salaries,

NOW THEREFORE BE IT RESOLVED, that the House of Delegates recommends to the Board of Trustees and Fee Schedule Committee that Assisting Surgeons, excluding house staff, will charge directly either the patient or their insurance company according to the service rendered.

President Clayton then reported that the following members of USMA had passed away since the last session of the House of Delegates held in September, 1966:

Harold E. Aldous, M.D.	Salt Lake City, Utah
Daniel T. Madsen, M.D.	Price, Utah
James Albert Peterson, M.D.	Salt Lake City, Utah
Thomas J. Howells, M.D.	Salt Lake City, Utah
William LeRoy Smith, M.D.	Salt Lake City, Utah
Claude L. Shields, M.D.	Salt Lake City, Utah
Max W. Stewart, M.D.	Payson, Utah
Dean A. Moffat, M.D.	Salt Lake City, Utah
Richard S. Tanner, M.D. ...	Salt Lake City, Utah

A moment of silence was accordingly observed.

There being no further business, the Tenth Interim Session of the House of Delegates of the Utah State Medical Association was adjourned at 3:35 p.m., March 22, 1967.

USMA Briefs

Dr. Waldo C. Perkins, Salt Lake City ear, nose and throat specialist, recently was installed as President of the Utah Oto-Ophthalmological Society. Dr. Perkins succeeds Dr. James H. Quinn, Salt Lake City ophthalmologist. Named as president-elect of the society was Dr. Lewis A. Peterson, Murray ophthalmologist.

Dr. Robert Ferguson, Salt Lake ear and throat specialist, is serving his third year as secretary of the organization, and Dr. Richard A. Aldous, Salt Lake City ophthalmologist, is serving as group secretary for his specialty.

* * * *

Mr. Hoyt W. Brewster has recently joined the staff of the Utah State Medical Association as Assistant Executive Secretary. Mr. Brewster is a native and lifetime resident of Salt Lake City. Prior to this affiliation, he operated his own printing and advertising business for a number of years. Other business activities in which he has engaged are in the fields of banking and real estate.

The son of Benjamin S. and Myrtle Hayes Brewster, he received his education in the Salt Lake City schools, L.D.S. College, and the University of Utah. He is married to the former Naomi Smith, and they are the parents of four daughters and two sons.

Among his affiliations are: the L.D.S. Church in which he was recently released as Bishop of the Garden Park Ward after serving 14 years; Sons of Utah Pioneers Luncheon Club; Lions International; and the Towne House Athletic Club.

We welcome Mr. Brewster to the USMA staff and look forward to many years of pleasant association.

* * * *

James T. Weston, M.D., will be the first full-time forensic pathologist to fill the position of medical examiner in Utah, effective July 1, 1967. Announcement was made recently at a State Board of Health meeting by G. D. Carlyle Thompson, M.D., Director of Public Health, as a preparatory step for the implementation of the recently-enacted reorganization bill making the medical examiner's office a part of the State Health Department beginning July 1.

Dr. Weston has published numerous scientific papers in his special field, most recent of which is one now being published by the University of Chicago Press entitled, "The Pathology of Child Abuse." Other publications include, "Cardiac Arrest in Surgery," "Airway Foreign Body Fatalities in Children," and "Forensic Pathology Slide Seminar."

* * * *

Dr. C. Hilmon Castle, coordinator of the Intermountain Regional Medical Program, has been elected President of the Association of Medical Television Broadcasters (AMTvB).

A founding member of AMTvB, which was organized in 1965, Dr. Castle has been prominent in developing the use of open circuit television as a means to advance the postgraduate training of practicing physicians throughout the U.S. In describing the purpose of AMTvB, Dr. Castle stated that it is an organization of medical schools and professional organizations interested in the production and shared utilization of open circuit television for continuing medical education. At the present time, the Association is developing a central repository for a growing library of taped programs, to be used interchangeably among the membership. Other objectives are to provide guidelines for the development of new projects and provide a forum for the exchange of ideas and techniques.

* * * *

The following two Utah physicians have been elected to fellowship in the American Academy of Pediatrics: Dr. Edmund C. Evans, Salt Lake City, and Dr. Paul R. Stowell, Logan.

To qualify for membership, a physician must be certified by the American Board of Pediatrics as a fully-qualified specialist in the field of child health, as well as have a minimum of five years in practice. The academy now has 9,819 members.

* * * *

Dr. N. Frederick Hicken, Salt Lake City surgeon, attended a recent Clinic of Abdominal Surgery meeting in Washington, D. C. While there he presented papers on "Surgical Anatomy and Clinical Physiology of the Pancreas," and "Pancreatitis and Cholecystitis, Companion Diseases." He also conducted a panel on "Intra-Abdominal Hemorrhages" for the general assembly. Before the general meetings of the North American Society of Abdominal Surgery, Dr. Hicken likewise gave a paper on "Surgical Jaundice" and one on "Problems in Biliary Tract Disease." Dr. Vernon Stevenson, Salt Lake City surgeon, also moderated a panel and presented a paper on "Carcinoma of the Colon."

This organization has a membership of over 9,000 surgeons confining their practice to the abdominal cavity.

Guidelines for Physical Evaluation of High School Athletes*

This is an attempt to provide guidelines for physicians responsible for the preseason physical examinations of junior and senior high school athletes. The same criteria may be used in the evaluation of the preteenage child participating in sports.

Several aspects of the problem are considered:

(1) Disqualifying conditions are variable depending upon the sport. There are several physical defects that limit participation in contact athletics, but are not restrictive for non-contact sports.

(2) There are absolute contraindications to athletic participation, but there are many more defects that deserve individual consideration.

(3) There are many obviously disqualifying conditions not mentioned in the report. The committee's recommendations consider the less obvious or questionable physical defects that limit athletic participation.

(4) Medical criteria for evaluating the high school athlete is different from that of the professional athlete.

(5) The disqualifying conditions that are considered relative are so listed because (a) the disability may be mild or severe and would have to be individually considered or (b) participation might be acceptable in one sport but not in another.

(6) It is apparent that factors other than medical must be considered before restricting sports activity, provided there are no absolute contraindications. Such things as (a) how important is it to the athlete to play, (b) how good is he in the sport, (c) is he mature in the acceptance of his physical defect, (d) does he have other interests and abilities that can be developed, (e) do his parents understand the risk of his participation.

(7) It is the responsibility of the physician to guide the rejected athlete into sports where he can participate or into other areas of interest.

The committee used the following resources for its recommendations:

(1) Nebraska State Medical Society—list of disqualifying conditions.

(2) AMA reports of the Committee on the Medical Aspects of Sports.

(3) Medicine in Sports—newsletter.

(4) Tribune Sports Report—Medical Tribune.

(5) Pediatric Clinics of North America, Vol. 7, No. 1.

(6) Personal Communications with Drs. Harry Boyd, Duane Lahey, Ralph Cotton, James Philpott, Jr., and George Khoury.

**AMA General Assumptions for Amputees*

1. The amputee is otherwise acceptable as a varsity candidate—that is, the only question as to his eligibility for participation is the loss of limb and the prosthesis.

2. The integrity of the affected limb is medically affirmed—that is, there is no known underlying bone disease, skin ulceration or other medical contraindication to activity.

3. The decision to play the candidate in competition would not be done for sympathetic or sensational reasons—that is, he would be judged only on his merit compared to his teammates on the basis of training, performance and sportsmanship.

4. The nature of the specific sport does not impose undue risk for the amputee or the teammates and opponents of the amputee—that is, an inherent risk of the sport does not become a significant hazard.

Specific recommendations of the AMA Committee on the Medical Aspects of Sports, relative to interscholastic football

1. *Allow* the participation of arm amputee without prosthesis.

2. *Disallow* the participation of the arm amputee with prosthesis or the A-k, B-k amputee.

3. *Allow* the participation of the foot amputee with prosthesis if proper padding is provided.

*Report of the Committee on Medical Aspects of Sports presented to the House of Delegates at the 96th Annual Session of the Colorado Medical Society, Sept. 25-28, 1966; James E. Strain, M.D., Chairman.

TABLE 1

Disqualifying Conditions for Contact Sports—
Football, Wrestling, Hockey, Boxing, Basketball, Baseball, Soccer and Lacross

	Absolute Contraindications	*Relative Contraindications*
1. Neurological	1. Concussion with loss of consciousness—out of the game. 2. Two concussions—out for the season. 3. Three concussions—out of contact sports. 4. Large cranial defects following intracranial surgery.	1. Epilepsy, if well controlled (no seizure for one year). 2. A grandmal seizure can follow a head injury without other evidence of epilepsy. This type of seizure should fall into the same category as concussion.
2. Eye	1. Absence of one eye or amblyopia of one eye of 20/200 (corrected). 2. Retinal detachment (repaired or unrepaired). 3. Congenital glaucoma.	1. Active eye infection.
3. Respiratory	1. Any active lung infection, including tuberculosis.	1. Bronchial asthma (may participate to tolerance).
4. Cardiovascular	1. Cardiac enlargement from any cause. 2. Severe mitral stenosis. 3. Aortic stenosis. 4. Cyanotic heart disease. 5. Active myocarditis. 6. Symptomatic pulmonary hypertension.	1. Resting BP over 140 systolic and 90 diastolic should be studied before allowing participation in athletics.
5. Endocrine		1. Diabetes is a contraindication only if there is poor control and supervision.
6. Abdomen	1. Undescended testes over the pubic ramus. 2. Any enlarged major abdominal organ (spleen, liver, kidney).	1. Inguinal hernia.
7. G-U System	1. One kidney missing or seriously damaged. 2. Active kidney infection.	1. One testicle missing.
8. Musculoskeletal	1. Navicular fracture until healing is complete. 2. Spondylolisthesis and spondylolysis. 3. Hip disease (a) Legg Perthes (b) Slipped epiphysis (c) Septic hip (d) Chronic osteomyelitis 4. Active epiphysitis of the spine.	1. Instability of the knees. 2. Recurrent dislocation of the shoulder. 3. Osgood Schlatter's disease, where there is pain on movement. 4. Tendency to develop myositis ossificans. *5. Metabolic bone disease resulting in weakening of the skeleton. *6. Amputees.
9. Hematological	1. Blood coagulation defects.	
10. Skin		1. Active bacterial infection. 2. Active herpes simplex. 3. Severe cystic acne.

*See AMA General Assumptions.

TABLE 2

Disqualifying Conditions for Non-Contact Sports—
Tennis, Golf, Swimming, Track, Gymnastics

Conditions listed under Contact Sports will apply, with the following exceptions:

	Absolute Contraindications	*Relative Contraindications*	*No Contraindications*
1. Neurological	1. In swimming and certain gymnastics, such as the rings and high bar, epilepsy, if there has been a seizure in the previous year.		1. Susceptibility to cerebral concussion.
2. Eye			1. One eye missing or amblyopic.
3. Abdomen		1. Enlarged abdominal organ.	1. Undescended testes over the ramus.
4. Cardiovascular		1. Cardiac enlargement from any cause. 2. Severe mitral stenosis. 3. Aortic stenosis. 4. Cyanotic heart disease. 5. Active myocarditis 6. Symptomatic pulmonary hypertension. 7. BP above 140/90.	
5. G-U System		1. One kidney missing.	1. Testicle missing.
6. Musculoskeletal		1. Navicular fracture. 2. Septic arthritis. 3. Chronic osteomyelitis.	
7. Hematological		1. Blood coagulation defects.	

MONTANA

MMA News Items

The 20th interim session of the Montana Medical Association was held in Helena last month and was the best attended midyear meeting of this Association. The registration records indicate that there were more than 113 Montana physicians registered and nine individuals representing affiliated organizations, or a total of 122. It was the largest registration of physicians present at an interim session of this Association during recent years.

* * * *

It is not too early to plan to attend the 89th Annual Meeting of the Montana Medical Association in Missoula, September 14-16. The Program Committee, under the chairmanship of John A. Evert, M.D., reports that the scientific program of this meeting is nearly completed and that an unusually fine group of clinicians and medical educators have accepted the invitation of the committee to discuss many scientific subjects of primary importance to physicians. NOW is the time to plan to attend the 89th Annual Meeting and to complete your hotel or motel reservations.

Physicians in the News

John S. Anderson, M.D., Helena, executive officer of the State Board of Health, and C. R. Svore, M.D., Missoula, have been appointed by Governor Babcock to serve as members of the Air Pollution Control Advisory Council. . . . William F. Cashmore, M.D., Helena, and Edwin L. Stickney, M.D., Miles City, have been elected members of the Board of Directors of the Montana Association for Mental Health. . . . George E. Trobough, M.D., Anaconda, was elected president of the Montana Tuberculosis Association at its recent annual meeting in Lewistown. . . . The Board of County Commissioners of Yellowstone County has appointed Donald L. Hicks, M.D., Billings, and Warren D. Bowman, Jr., M.D., Billings, members of an advisory committee of the Yellowstone County Home Health Agency. . . . William B. Danner, M.D., Sidney, spoke about his recent trip to Europe at a meeting of the members of District 12 of the Montana Nurses Association.

* * * *

Robert B. Curry, M.D., director of the Student Health Service of the University of Montana, seeks a physician to serve as a full time member of the staff of the Student Health Service. Full information about this opportunity may be obtained upon inquiry from Doctor Curry, Student Health Service, University of Montana, Missoula 59801.

NEVADA

NSMA Briefs

Las Vegas physicians participating in overseas teaching and treatment programs within the last few months include John W. Batdorf who dedicated two months to work in Dhanang, Vietnam, a great share of which was with civilian battle casualties; and Kirk V. Cammack who devoted two months to an even more primitive area, Nha-Trang, Vietnam. Both doctors worked under the auspices of the AMA overseas aid program.

* * * *

Lorne M. Phillips of Henderson is engaged with the University of Hawaii in their teaching program in Okinawa as Chief of General Surgery. The program is starting in a new hospital of 216 beds with further construction in progress. He reports that the ultimate goal of the project is to develop an internship and residency training program to American standards.

* * * *

T. C. Harper of Reno has just returned from a CARE-MEDICO tour in the Dominican Republic where he worked in Santiago in the Arturo Erullon Hospital for Children and the Jose Cabanal Hospital for Adults. He was also Consultant to the Social Security Hospital in orthopedics. Commended by the Nevada State Legislature in its recently concluded 54th Session, Dr. Harper is an "old timer" in overseas medical programs, having participated in the Orthopedic Letters program on several occasions. His commendation from the Legislature was ". . . for his selfless, dedicated and devoted acts of humanitarianism with wishes of continued success in his service to medicine and mankind. . . ."

* * * *

The following is an excerpt from a letter over the signature of Mrs. Margaret Duthie, Librarian of the Calgary Associate Clinic in Alberta, Canada:

"You will be interested to know that Dr. Feld's article* in March/66 R.M.M.J. was so outstanding that we had it Xerox'd and sent to the middle east by air mail special delivery. A medical man in Calgary consulted one of our internists re his brother who is in the middle east with an oil company. This man has a subacute endocarditis and is allergic to penicillin, and the attending physician was stumped, so wrote to the man's brother about the problem. Of all the material (limited) our internist thought that Dr. Feld's article was outstanding and covered the field so thoroughly, that they decided to send it to the attending doctor, along with the suggested drugs. A little publicity for your Journal."

*Bacterial Endocarditis—Treatment in patients allergic to penicillin, by Alan W. Feld, M.D., Las Vegas, Nevada. RMMJ, March, 1966, p. 61.

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

A modified chick embryo smallpox vaccine safe for use in children with eczema was reported to the American Pediatric Society by Dr. C. Henry Kempe, professor and chairman of the Department of Pediatrics in the University of Colorado School of Medicine. Dr. Kempe, a specialist in smallpox and its complications, told the annual meeting of the society tests of the new vaccine in 1009 patients suffering from eczema or other skin disorders produced no serious reactions. Until now, eczema has been regarded as an absolute contraindication to smallpox vaccination.

The new vaccine has been developed by Dr. Kempe and his co-workers—Dr. Vincent A. Fulginiti, assistant professor of pediatrics at the University of Colorado, and Dr. Henry R. Shinefield of the Permanente Foundation, San Francisco—in collaboration with the Wyeth Laboratories, utilizing one of the Rivers strains of vaccinia (cowpox) virus. The vaccine is weakened, or attenuated, by repeated passages through chick embryos.

Dr. Kempe's work with the new vaccine has been supported in part by grants from the National Institute of Allergy and Infectious Diseases.

* * * *

Appointment of Mrs. Colette Bakken Kerlin of the University of California at Los Angeles School of Nursing to the faculty of the University of Colorado School of Nursing has been announced by Dr. Kathryn M. Smith, CU nursing school dean.

Mrs. Kerlin will become an associate professor of nursing effective with the opening of the fall academic year at the CU Medical Center in Denver. She is now an assistant professor in this field at the UCLA nursing school. She is a member of the National League for Nursing and has been active in the Los Angeles district affairs of the American Nurses Association.

* * * *

Dr. James Austin of the University of Oregon has been appointed professor and head of the Division of Neurology in the CU School of Medicine effective July 1, 1967.

Dr. Austin succeeds the late Dr. James W. Stephens, who died last September after serving on the CU medical faculty since 1953. Dr. Ralph I. Druckman, associate professor of neurology, has been acting head of the neurology division since Dr. Stephens' death.

A native of Cleveland and a graduate of the Harvard Medical School, Dr. Austin has been a member of the faculty of the University of Oregon Medical School in Portland since 1955. He currently is serving as professor of neurology there.

* * * *

Dr. Giles F. Filley, associate professor of medicine in the University of Colorado School of Medicine and pulmonary physiologist in the Webb-Waring Institute for Medical Research at the CU Medical Center, is author of a new book for physicians on the diagnosis and treatment of pulmonary diseases being published this month by Lea & Febiger, Philadelphia medical publishing house.

The 250-page illustrated book, "Pulmonary Insufficiency and Respiratory Failure," is a guide to the physiological basis of the major manifestations of chronic pulmonary disease such as cough, shallow breathing, labored breathing and deficient oxygenation of the blood.

The book was prepared with the assistance of several colleagues at the CU Medical Center: Dr. D. Boyd Bigelow, assistant in medicine and fellow in pulmonary diseases; Dr. Bernard E. Levine, fellow in respiratory physiology; Dr. Roger S. Mitchell, associate professor of medicine and director of the Webb-Waring Institute; Dr. Thomas L. Petty, assistant professor of medicine; and Dr. John V. Weil, fellow in cardiovascular physiology.

* * * *

The Division of Dermatology of the University of Colorado School of Medicine has received a grant of $5,000 from the new national Dermatology Foundation to assist in the training of skin disease specialists at the CU Medical Center in Denver.

Dr. Donald M. Pillsbury, chairman of the board of the foundation and professor of dermatology at the University of Pennsylvania School of Medicine in Philadelphia. said a total of $45,000 will be distributed to aid newly established dermatology programs in American medical schools.

The funds are the first to be distributed by the foundation, a new national non-profit organization established less than two years ago to obtain support for educational and scientific activities in the field.

* * * *

A special, limited-enrollment course in "Radioisotopes in Medicine and Biology" will be offered by the Department of Radiology of the University of Colorado School of Medicine from June 12 to Sept. 3. The course will involve two hours of lectures and four hours of laboratory work each week. Subject matter to be covered will include atomic and nuclear structure, parameters of radioactive decay, interactions of radiation with matter, gaseous ionization detectors, solid and liquid scintillation detectors, solid state detectors, nuclear instrumentation, techniques of in vitro and in vivo radioassay, external and internal dosage calculations, statistics of counting, and radiation hazards.

Prerequisites for the course are differential and integral calculus and college physics. Further information may be obtained from Dr. William Hendee, assistant professor of radiology and radiation physicist for the department, at the CU Medical Center.

* * * *

The third of three grants of $9,000 each has been presented to the University of Colorado School of Medicine by the National Fund for Medical Education to support a continuing study of curriculum and teaching methods. The NFME was founded by former President Dwight D. Eisenhower. Its purpose is to mobilize financial support for medical education among American industries and private foundations.

Dr. John H. Githens, associate dean for student and academic affairs, administers the CU study project supported by NFME in collaboration with Dr. William G. Cooper, professor of anatomy and director of the unit teaching laboratories being created for freshman and sophomore medical students in the remodeling construction now under way at the CU Medical Center.

The NFME grants have assisted in the planning and equipping of the unit laboratories, particularly in the audio-visual areas of teaching machines, closed-circuit television, film-strip teaching, and curriculum adjustments to the new techniques.

In addition, the study project has included planning for a prospective Division of Medical Education Research in the medical school for continuing investigations of teaching methods and adjustments of the curriculum to accommodate advances in scientific knowledge and changes in professional demands.

University of Utah College of Medicine

The University of Utah College of Medicine, Department of Medicine, has been awarded a $1.5 million grant by the National Institutes of Health, Department of Health, Education and Welfare, for continuing extensive study of blood diseases.

The investigators involved on the project are Drs. John Athens, Richard Lee, Andrew Deiss, Thomas Bithell, M. M. Wintrobe and G. E. Cartwright. The grant is to cover seven years of research. Some of the main areas to be explored under the grant will be bleeding diseases, clinical and experimental anemias, iron and copper metabolism, and leukemia.

* * * *

Dr. George E. Cartwright, professor of medicine, was recently appointed chairman of the University of Utah Department of Medicine. He will succeed Dr. Maxwell M. Wintrobe who is retiring after more than 20 years of service in the position. The appointment becomes effective July 1.

Dr. Cartwright joined the College of Medicine staff July 1, 1947, as an instructor of medicine. During his career at the University he has gained stature in the fields of hematology and mineral metabolism.

Dr. Richard K. Hughes, an outstanding young cardiovascular surgeon, recently was appointed by the University of Utah Board of Regents as an associate professor in the U. of U. Department of Surgery. Dr. Hughes currently is chief of thoracic and cardiovascular surgery at the Los Angeles Veterans Administration Center, affiliated with the School of Medicine at the University of California at Los Angeles.

He received his A.B. from Stanford in 1951 and his M.D. from the Stanford School of Medicine in 1955. He completed his internship at George Washington University Hospital, Washington, D. C., in 1955, and his residency at the same hospital in 1960.

Dr. Hughes has taught at both George Washington and UCLA. He is a member of the American Board of Surgery, the Board of Thoracic Surgery, American College of Surgeons, American Thoracic Society, and the American Medical Association.

* * * *

Internship assignments for 52 graduating seniors of the University of Utah College of Medicine, class of 1967, were received recently. Each student selected hospitals of preference and the assignments were made through a nationwide matching program.

Nearly 50 per cent of the 1967 graduating class received internships at university hospitals across the nation. Many will enter the armed forces and will fill hospital positions in 21 different cities and countries.

* * * *

Medical Assistant Scholarships

Loans for medical assistant training are now available from the Maxine Williams Scholarship Fund, sponsored by the American Association of Medical Assistants. Each loan is for $300. As AAMA assumes all administrative costs, there is no interest rate. Repayment may be made after the student is employed.

Anyone who is a high school graduate, and wishes to take formal training is eligible to apply for a loan. Application blanks are available from AAMA headquarters, 510 North Dearborn Street, Chicago, Illinois 60610.

MEETINGS

Rocky Mountain Medical Conference

The Rocky Mountain Medical Conference will be held this year at Jackson Lake Lodge, August 29-September 1. Scientific sessions will convene on Wednesday morning, August 30, on Thursday, August 31, and until noon on Friday, September 1. Immediately preceding these scientific sessions of the Rocky Mountain Medical Conference, the House of Delegates of the Wyoming State Medical Society will convene. Its sessions will begin on Monday morning, August 28, and will conclude Tuesday afternoon, August 29. The Program Committee promises an interesting session, as well as an opportunity for sightseeing.

Colorado Academy of General Practice Symposium on Respiratory Disease

August 26 and 27, 1967
Antlers Plaza Hotel, Colorado Springs

Saturday, August 26

Heart-Cancer-Stroke Program—
Paul R. Hildebrand, M.D., Director, Colorado-Wyoming Regional Medical Program for Heart, Cancer, Stroke and Related Conditions, Denver.
Intestinal Problems in Children—
Giulio Barbero, M.D., Philadelphia
Disaster Preparedness—Francis P. Jackson, M.D., Chairman, AMA Committee on Disaster Medical Care
Mass Care in Viet Nam—James Henderson, M.D., Surgeon, Denver
Evening Guest Speaker: Carroll Witten, M.D., President.

Sunday, August 27

Pulmonary Problems of the Newborn — Joseph Butterfield, M.D., Children's Hospital, Denver
Asthma, Bronchitis and Recurrent Respiratory Infections—speaker to be announced
Cystic Fibrosis—Giulio Barbero, M.D., Children's Hospital, Philadelphia
Pulmonary Function Testing—
Milton Wiggins, M.D., Colorado Springs
Chronic Bronchopulmonary Disease—
Allen Pierce, M.D., Southwestern University

Current Concepts in Surgery

The Department of Surgery of the University of Wisconsin Medical Center will present a conference on "Current Concepts in Surgery" August 24-26 at the Wisconsin Center on the university campus in Madison. The conference will feature nationally prominent speakers as well as faculty members of the University of Wisconsin Medical Center.

For further information contact Thomas C. Meyer, M.D., Assistant Dean, Department of Postgraduate Medical Education, Room 302, 333 North Randall Avenue, Madison, Wisconsin 53706.

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THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Differential Diagnosis: By Stanley B. Berkowitz. Springfield, Ill., 1967, Thomas. 333 p. Price: $11.50.

Doeumentary History of Psychiatry: By Charles E. Goshen. N. Y., 1967, Philosophical Library. 904 p. Price: $20.00.

Ethics in Medical Progress: Ciba Foundation Symposium. Boston, 1966, Little, Brown. 257 p. Price: $11.75.

Heart Disease in Children: By Benjamin M. Gasul. Phila., 1966, Lippincott. 1363 p. Price: $33.00.

Histones: Their Role in the Transfer of Genetic Information: Ciba Foundation. Boston, 1966, Little, Brown. 115 p. Price: $3.50.

The Human Heart: By Brendan Phibbs. St. Louis, 1967, Mosby. 253 p. Price: $4.95.

The Neuroses: By Henry P. Laughlin. Wash., D. C., 1967, Butterworths. 1076 p. Price: $21.50.

The $100,000 Practice and How to Build It: Englewood Cliffs, N. J., 1966, Prentice-Hall. 190 p. Price: $15.00.

Principles of Biomolecular Organization: Ciba Foundation Symposium. Boston, 1966, Little, Brown. 491 p. Price: $15.00.

Psychoanalysis, Psychiatry and Law: By Jay Katz. N. Y., 1967, Free Pr. 822 p. Gift.

Renal Carcinoma: By James L. Bennington. Phila., 1967, Saunders. 263 p. Price: $15.00.

Book Reviews

Essentials of Urography: By Anthony F. Lalli. Springfield, Ill., 1967, Thomas. 150 p. Price: $12.75.

The primary intent of the author is to create an interest in producing urograms of such excellent quality that all of the answers for that patient are secured and other examinations of the urinary tract become unnecessary.

The book is designed to aid all physicians involved in ordering, performing or interpreting excretory urograms. A medical practitioner, a radiologist and urologist in training should find the information here particularly helpful.

The basic principles involved in executing and interpreting urograms are set forth. Emphasis is placed on the tailored urogram which consists of a full appraisal of the patient and his problems and the indications for the excretory urogram. The knowledge of renal failure, hypertension, location of pain or mass and adequacy of preparation would indicate the appropriate choice and dosage of contrast medium, the proposed timing of the films, the positioning of the patient, and the use of ureteral compression. The specific indications for the assorted types of excretory urograms are detailed and methods involved are discussed.

Retrograde pyelograms and renal angiograms are indicated at certain points, but are not discussed at length. The subject of excretory urography is the primary concern of the author.

The illustrations are for the most part of excellent quality and provide a wide range of pathology encountered.

Claude D. Baker, M.D.

Prevention of Ischemic Heart Disease: Principles and Practice: Edited by Wilhelm Raab. Springfield, Ill., 1966, Thomas. 466 p. Price: $25.50.

In this book, Dr. Raab completely covers all of the contributory causes of ischemic heart disease and clearly defines this entity.

He discusses in detail the preventative measures to be taken against this disease. The dietary factors, the importance of exercise, the stress element and nicotine all are given elaborate mention.

The book is easy to read and is also enjoyable. It is to be recommended to physicians and others interested in new concepts of ischemic heart disease.

F. C. Hewlette, M.D.

Handbook of Ocular Therapeutics and Pharmacology: By Philip P. Ellis, and Donn L. Smith. 2d ed. St. Louis, 1966, Mosby. 224 p. Price: $9.75.

This book is divided into two parts: In section one, ocular therapeutics are outlined, and for each major category of ocular disease, the appropriate drugs and their dosage are discussed. In addition to the specific ocular disease categories, there are chapters on principles of cortisone and ACTH therapy, principles of antibiotic therapy, medical agents in surgical care and autonomic drugs.

In section two, each of the drugs used in ophthalmic care is outlined with the drugs' action, ophthalmic uses, side effects and contraindications, the available preparations and dosage concisely discussed.

In addition to outlining new drugs, the second edition also contains the chapter on autonomic drugs and a pediatric dosage table which were not included in the first edition.

This book is of great value to the ophthalmologist and non-ophthalmologist alike in that it concisely presents the basics of treating eye disease as well as the pharmacology of the drugs used in ocular therapy.

James E. Leibold, M.D.

The State of the Art of Traffic Safety, The Automobile Manufacturers Association: By Arthur D. Little, Inc., Acorn Park, Cambridge, Mass., June 1966, 623 pages.

This is a typical A. D. Little production, excellent typography, paper one likes to touch, pleasing and logical format, extensive bibliography, but not extensive enough, as we shall point out. The work is essentially a whitewash of the motorcar industry, which is, perhaps, not surprising. The recurrent theme in chapter after chapter is that we need more research, there are not enough data to provide working guidelines, the motorcar industry has done as much as it could with the information at hand.

One recalls that the Little study of the tobacco problem for the American Medical Association resulted in the conclusion that the evidence for tobacco as the cause for cancer was most incomplete, that more research was needed, and that a grateful industry provided the American Medical Association with ten millions for the needed research.

The substantive and realistic lie to the point of view and stand taken by the Little Company in the motorcar study is provided by two very

hard pieces of data, the Mercedes automobile and the Rover-2000. In some way or other these two firms were able to accumulate enough engineering data to construct and market very profitable and efficient crash-protective automobiles.

Eighteen years ago I examined with some care a Mercedes door latch, which in my opinion was then a better door latch than any appearing on a 1967 American automobile. A few months ago, I was able to examine a crashed Mercedes. None of the doors opened in the crash and all opened on call, but one had to be kicked open. It was a very heavy crash, and none of the three occupants was injured. I asked for a file from the mechanic. I was not able to make this good file engage the metal of the door latch. Mercedes states that they pay $23 per door for their latches. They are marked with the name, Kiekert.

In 1958, the Rover people started the development of the -2000 on the basis of the knowledge then extant, and five years later put on the road an automobile which the critics hail as the "best sedan in the world." It is good looking, drives and rides beautifully, at 40 mph in fourth gear one gets 40 miles per gallon of fuel, its design and construction provide phenomenal crash protection, and all in all it in no way resembles the "tank" that Detroit says one must have to have good crash protection.

Perhaps the most realistic chapter in the report is that on alcohol. Motorcars do not drink. Fig. 17, on page 234, intrigued this reviewer. It is alleged here that up to five ounces of whiskey are required to produce a blood alcohol level of .049 per cent. Correspondence with the Project Director revealed that this was derived from Haddon's statement quoted on page 83 where it is made clear that these figures concern drinking one or two hours *after* an average meal, which is a motorcar of another color. Familiarity with Haddon's writings allows this reviewer to know that Haddon's statement is based entirely upon the work of Coldwell, whose definitive *Report on Impaired Driving Tests* does not appear in the Little bibliography, nor does the even more definitive *Drinking and Driving* of Dr. H. Ward Smith.

The nomogram constructed by Dr. Coldwell is notoriously very liberal, and he states, "On the average, the estimated amount of distilled spirits or beer consumed is 2.3 fl. ozs. and 1.5 pints higher, respectively, than given by Ferguson and Bell's 'Alcodial'," which is ADL reference No. 1103. Ferguson and Bell state that two drinks in an hour of 1½ ounces each of 40 per cent alcohol will place the 160 pound person at .052. Of course, this is on an empty stomach, and not after "an average meal."

This criticism notwithstanding, the treatment of the alcohol problem in this report is very well done. It is a pity the report could not be as objective as this in regard to the automobile, but, again, perhaps, this is not surprising.

Horace E. Campbell, M.D.

Cellular Concepts in Rheumatoid Arthritis: Edited by C. A. L. Stephens, Jr., and A. B. Stanfield. Springfield, Ill., 1966, Thomas. 212 p. Price: $14.75.

At one point in the discussion period of this symposium, one of the participants comments that, "We have been exposed to a lot of new data in this little while, and they take a little time to digest." To one uninitiated in the basic fundamentals of auto-immunity, digesting this book may take more than a "little while." Seven authorities have pooled their knowledge and have given us a non-clinical discussion of the possible pathogenesis of rheumatoid arthritis.

Of interest both to the laboratory investigator and the clinician are the electron micrographs depicting the anatomy of the connective tissue cell and a discussion of its involvement in the biosynthesis of collagen. Dr. William Dameshek reviews basic concepts in auto-immunity in a chapter that will be "old hat" for the laboratory investigator, but which provides an excellent primer for the clinician. The fascinating photos of tissue cultures of rheumatoid and non-rheumatoid synovia will be of general interest.

Even if the physician *were* able to digest the contents of this volume, it is not likely that his next patient with rheumatoid arthritis would benefit from his struggle. It will be his patient ten years hence, however, who will most certainly profit from the studies of the pioneers contributing to this symposium.

Herbert Kaplan, M.D.

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Syrup of Ipecac in Acute Poisoning*

The first step in emergency treatment of poisoning is efficient removal from the stomach of as much of the ingested substance as possible. While many technics have been recommended to accomplish this, recent evidence from the files of the National Clearinghouse for Poison Control Centers suggests that the best method for bringing about removal of ingested poisons is the use of Syrup of Ipecac. This medication, one of the oldest in the physician's armamentarium, will bring about emesis within 15-20 minutes of an adequate dose. Moreover, it will cause the patient to vomit capsules, pills, and unabsorbed medication in greater number and volume than mechanical stimulation of the throat, or gastric lavage. This emesis occurs regardless of the type of medication ingested. Thoman and Verhulst have shown that even after the ingestion of antiemetic medications, most patients will respond with emesis to a dose of Syrup of Ipecac.

The proper method of administering Syrup of Ipecac is as follows: 15 cc of the official preparation should be given to a child of 1 year of age or older, or 20-25 cc to an adult, followed by 2-3 glasses of milk or water to provide a sufficient fluid volume for the patient to vomit. In well over 80 per cent of patients, this dose will produce emesis within 20 minutes. If emesis does not occur, the dose may be repeated once after 20 minutes. If the second dose does not cause emesis, no more Ipecac should be given! The very few cases of serious poisoning which have occurred after the administration of Ipecac have resulted from unwarranted repetition of the medication "until the patient vomits." If 30 cc of Syrup of Ipecac given to a child, or 50 cc given to an adult fails to produce emesis, the patient should be intubated and gastric lavage instituted to remove the poison.

Contraindications to the use of Syrup of Ipecac are as follows:

1. A comatose patient. Under no circumstance should a comatose patient be given Ipecac. This will be inviting aspiration and its serious consequences. Patients who are exceptionally drowsy and have no gag reflex ought not receive this drug either.

2. Ingestion of hydrocarbons or hydrocarbon containing compounds. These substances have a very low surface tension and vomiting invites aspiration and a small amount will work havoc in the lungs by spreading over a very large area and causing widespread kerosene type pneumonia.

3. Ingestion of caustics or corrosive acids or alkaline substances, including *detergents.* These substances should be diluted with large volumes of water or milk and within the first hour after ingestion a Levin tube should be placed and the stomach lavaged with a large amount of water given in small portions. After the first hour esophogoscopy should be performed and a tube placed with the greatest of care.

Under *no circumstances* should the agent Fluidextract of Ipecac be given to any patient. This preparation has no place in modern medicine. It is 14 times as potent as Syrup of Ipecac and has been responsible for several deaths in children. It should never be available in hospital emergency rooms, homes, or any place where confusion with Syrup of Ipecac might occur.

*By Daniel T. Teitelbaum, MD, and Ray E. Helfer, MD. From the Physician's Poison Consultation Service, Colorado General Hospital.

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In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

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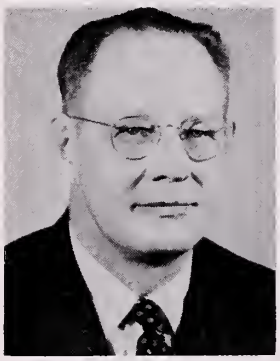
OBITUARIES

Colorado

It is with profound sorrow and a painful sense of loss that we record here the death of **Dr. Vetalis Vernon Anderson** in Colorado General Hospital on Wednesday, April 27, 1967. His death came suddenly following cardiac arrest at the end of a valiant but losing two-year battle against polycystic kidney disease.



Dr. Anderson was born in Chicago, Illinois, on April 17, 1908. Because a brother and sister born to his parents before him had both died at birth in Victor, Colorado, and because his parents attributed their deaths to the high altitude of Victor, they arranged for Dr. Anderson's birth in a Chicago hospital.

When Dr. Anderson was six months old, his mother brought him back to their mountain home in Victor, Colorado. There in the high country of the Rocky Mountains little Vetalis Vernon grew rapidly into a husky 200-pound, deep-voiced but soft-spoken, six-footer, straight as a mountain pine and as rugged as his beloved Rockies. Early in childhood his father nicknamed him "Vic" and it was by this name that most of his friends and colleagues knew him throughout the rest of his lifetime.

"Vic" received his primary and secondary education in the public schools in Victor, Colorado. Although he dropped out of high school at 17 for a period of six months to take a job as an aerial tram operator for the Kennicott Copper Company in Alaska, he later made up his lost school time and was able to graduate with his class from the Victor High School on schedule in 1926.

Working at various jobs at night, in the evenings, on weekends and as a hard-rock miner and at times as a rubber-tire factory worker during school vacations, he was able to put himself through college and medical school almost entirely by his own efforts.

After attending Colorado State University for two years he transferred to the University of Colorado where he received his A.B. degree in 1932 and his M.D. degree in 1936. While in college he became a member of Lambda Chi Alpha, Alpha Nu, and Phi Beta Pi fraternities.

Dr. Anderson served his internship at Denver General Hospital in 1936 and 1937. While interning he met a pretty nurse from Longmont named Hilda Luske, and they were married on Christmas eve, 1936. After completing his internship, Vic and Hilda moved to Del Norte, Colorado, where he began the practice of medicine in association with Dr. A. B. Gjellum.

While he was still an intern, Dr. Anderson joined the United States Army Medical Reserve Corps in 1937. Late in April, 1941, he was ordered to report for active duty and shortly thereafter was sent overseas with the 200th Coast Artillery, an anti-aircraft regiment of the New Mexico National Guard.

He was at Clark Field in Manila when the Japanese bombers attacked. His outfit fell back into the jungles of Bataan. Vic and the other members of his group, using anti-aircraft weapons as artillery, fought stubbornly and valiantly until, without ammunition, food or other supplies, they were forced to surrender on April 8, 1942.

He survived the infamous Bataan Death March, losing much strength and 80 pounds in weight along the way. After 18 months in a Japanese prison camp in the Philippines, he was transferred to a prisoner-of-war camp in Japan, where he remained until the end of the war. During the long, bitter months of his imprisonment he provided medical and surgical care for his fellow prisoners under brutally adverse conditions, with little food, few drugs and practically no medical equipment.

On three separate occasions during his captivity he was sentenced by his captors to face a firing squad, but each time his execution was called off, probably because the Japanese needed his services as a physician to take care of their many prisoners.

For his distinguished military services Dr. Anderson was later awarded the Bronze Star by both the Army and the Navy, the Bataan Medal of Honor from the State of New Mexico, two Presidential Citations, the Medical Combat Badge, and four battle stars.

After a three-month period of hospitalization immediately following his release from the Japanese prison camp in August, 1945, Dr. Anderson spent several months in postgraduate study in New York and Chicago. In June, 1946, he returned to Del Norte to his family and to resume the practice of medicine.

As part of his many civic activities after the war, Dr. Anderson participated in the emergency rescue program of the State Highway Patrol in the San Luis Valley. In this capacity he was called upon in 1959 to assist in a daring rescue of two survivors of an airplane crash high in the mountains near Del Norte. With an Air Force pilot, Dr. Anderson flew into an area of treacherous air currents at an altitude far above the usual operating level for large helicopters. In spite of unfavorable conditions and bad weather, the rescue was successful. For his part in this adventure Dr. Anderson was awarded the Sikorsky Medal and his Air Force pilot received the Distinguished Flying Cross.

Although heavily burdened by the demands of

his medical practice after the war, Dr. Anderson always found time to participate in the civic affairs of his community and in the health, educational and welfare activities of Colorado. He served on the Del Norte school board 14 years and for 10 years as president of the board. For a number of years he also held the position of Health Officer for the town of Del Norte. For six years he was a working member of the Rio Grande Forest Advisory Council.

In addition to all of this, Vic found time to serve as President of the Del Norte Rotary Club, the San Luis Valley Scottish Rite Association, the San Luis Medical Society, the Colorado Division of the American Cancer Society, and the Colorado Medical Society. Before his activities were curtailed by illness he was also active on the Governor's Mental Health Committee for Colorado.

Dr. Anderson was an active member and fellow of the International College of Surgeons, the Southwestern Surgical Congress, the American Academy of General Practice and the American Medical Association.

On September 21, 1965, at the annual meeting of the Colorado Medical Society in Colorado Springs the Board of Trustees and the House of Delegates of the Society honored Dr. Anderson by awarding him the Robins Community Service Award.

Vic Anderson was a good doctor, a good soldier, a good citizen, a good husband and father, and above all a good friend. To know him best was to know him in his own home. He was happiest by his own fireside in Del Norte, with his wife, Hilda, and his three daughters around him. He was a gracious host, and a visit to his home was always an experience to remember and to cherish forever.

In the last analysis Vic Anderson was a warm and friendly personality. His natural display of inborn gentle manners, his immense capacity for friendship, his thoughtfulness and consideration of the feelings of others—never servile or falsely ingratiating—were manifestations of a great and admirable mind and spirit.

He was a man of definite opinions which he did not hesitate to express whenever it was necessary for him to stand up and be counted. His acceptances of values were always based on common sense and genuine worth. Vic was slow to change, but always happy to enter into new ventures when convinced such action was right and desirable.

His character, his sweetness of personality and sound judgment cloaked him with an atmosphere of solidarity which inspired confidence and trust in those who sought his help, in those who worked with him, and in all those who knew him well.

Vic was more—much more—than just another capable leader. By his devotion to his family, his friends, his profession and his country, he created a living image of all that is good and admirable in our profession.

The Colorado Medical Society mourns the death of Vetalis Vernon Anderson. Its members are most grateful for the example of excellence he set for all of us in our lifetime and for the many things he did to improve the image of medicine in Colorado. He will live on in the hearts of all our members and will be remembered as a loyal friend, a strong influence for good will among men and, above all, as a beloved physician.

Bradford Murphey, M.D.

Montana

Dr. H. Ryle Lewis, formerly of Missoula, Montana, died in Spokane, Washington, on March 30, 1967. Dr. Lewis was born at Nezperce, Idaho, on March 17, 1907. He obtained his B.S. degree from the University of Idaho in 1929 and his M.D. degree from the University of Oregon Medical School in 1932. He was licensed to practice in Montana in 1955 and in 1956 engaged in the practice of neurology and psychiatry in Missoula. Dr. Lewis continued his practice in Missoula until 1966, when he returned to Spokane.

Utah

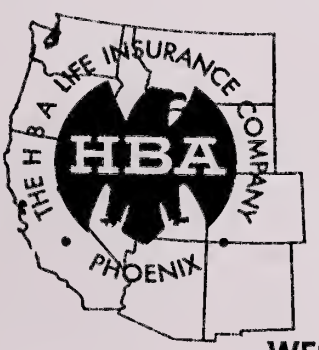
Robert D. Carlson, M.D., Ogden internist, died April 24, 1967, at the age of 46.

Born January 15, 1921, in Magna, Utah, Dr. Carlson was married to Mary Louise Clark on June 15, 1945.

Dr. Carlson graduated from the University of Utah College of Medicine in 1945, and subsequently interned in Albany, New York. He served a residency in internal medicine at Peoples Hospital in Akron, Ohio, and an advanced residency at the Veterans Administration Hospital in Grand Junction, Colorado. His military record includes service as a Navy medical officer during World War II, as well as a medical officer in the Korean War.

Dr. Carlson was a practicing internist in Trinidad, Colorado, for 11 years before coming to Ogden, Utah, where he was affiliated with the Ogden Clinic. He was a member of the American Medical Association; Utah State Medical Association; Weber County Medical Society; Geriatric Society; and Utah Society of Internal Medicine.

Surviving Dr. Carlson are his widow, and two daughters, Sharon Louise and Cathy Ann; three brothers, Kenneth A. and Gordon S., Salt Lake City, and Harold E. of McLean, Virginia; and two sisters, Mrs. Orson C. (Ruth) Owen, Salt Lake City, and Mrs. James (Jean) Hoag, Pocatello, Idaho.



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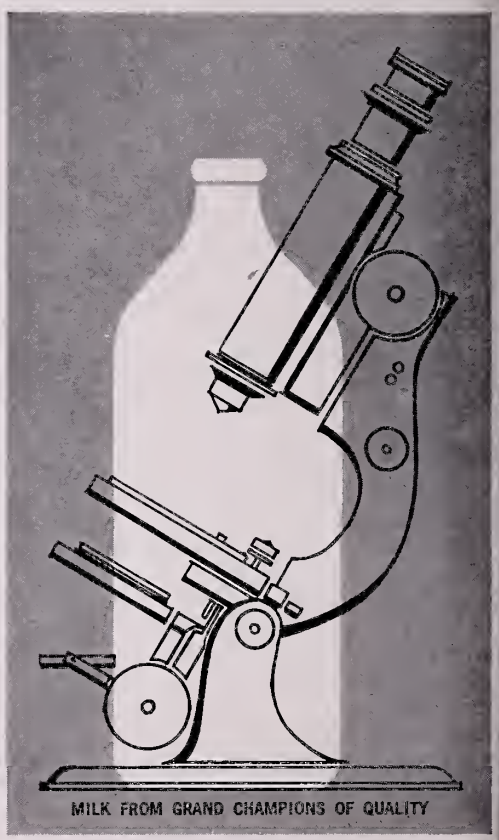

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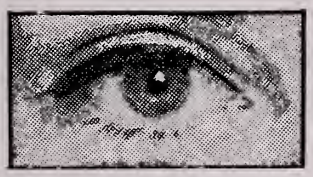

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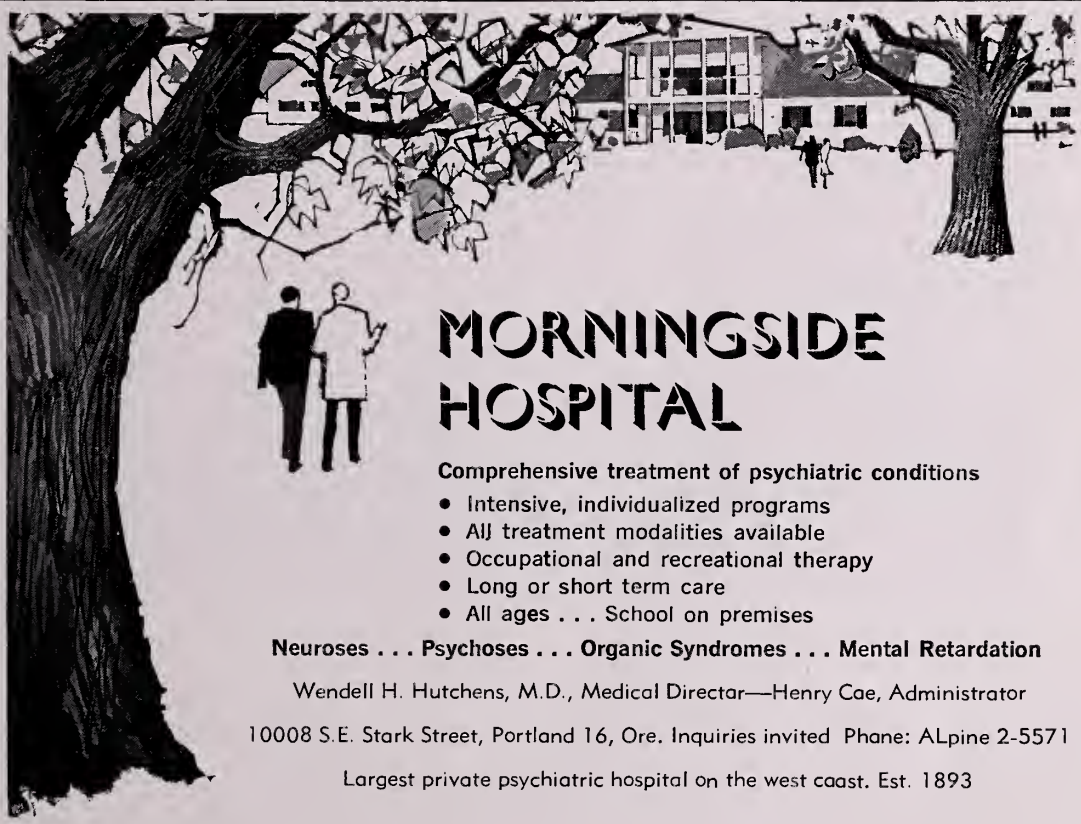

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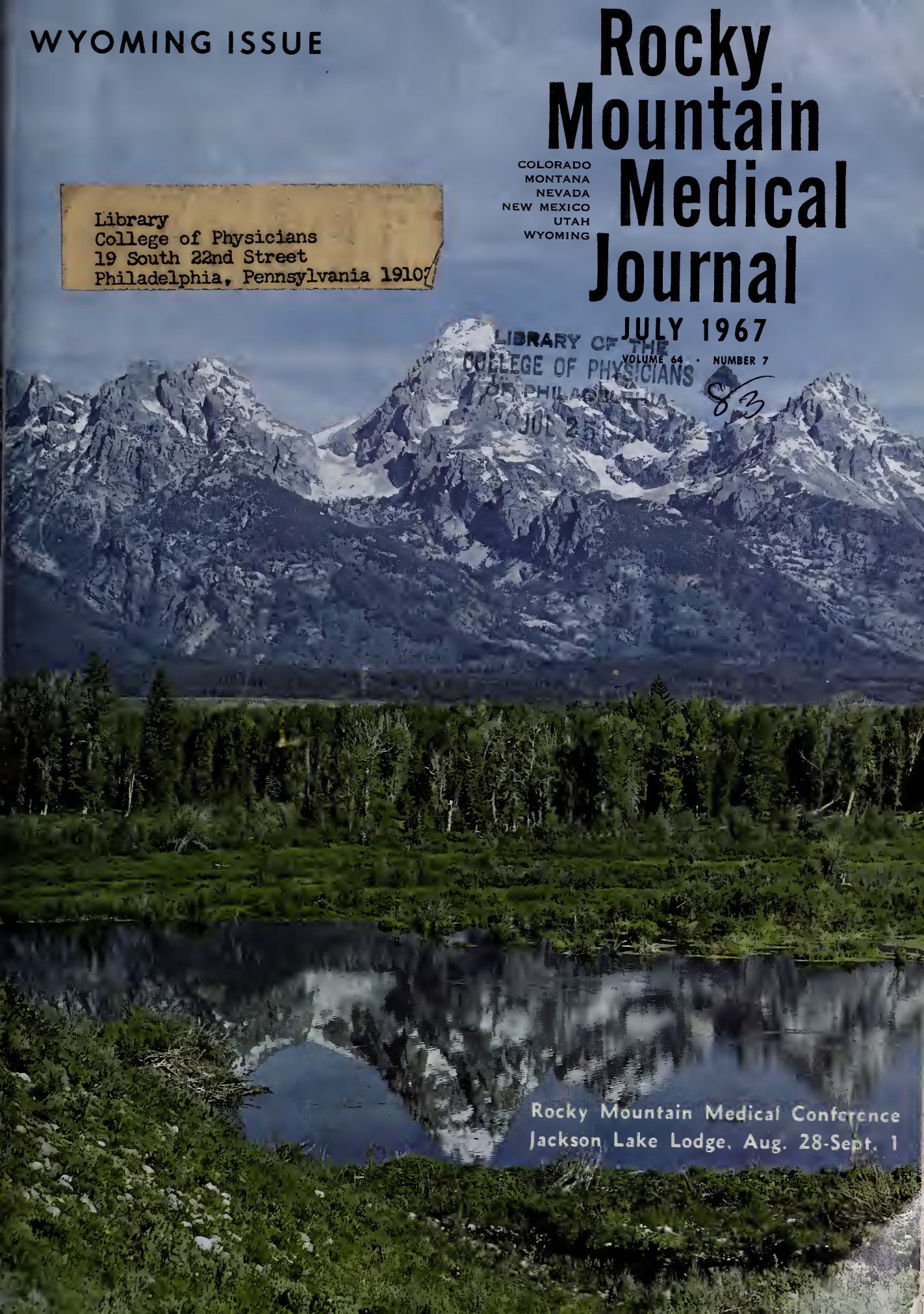

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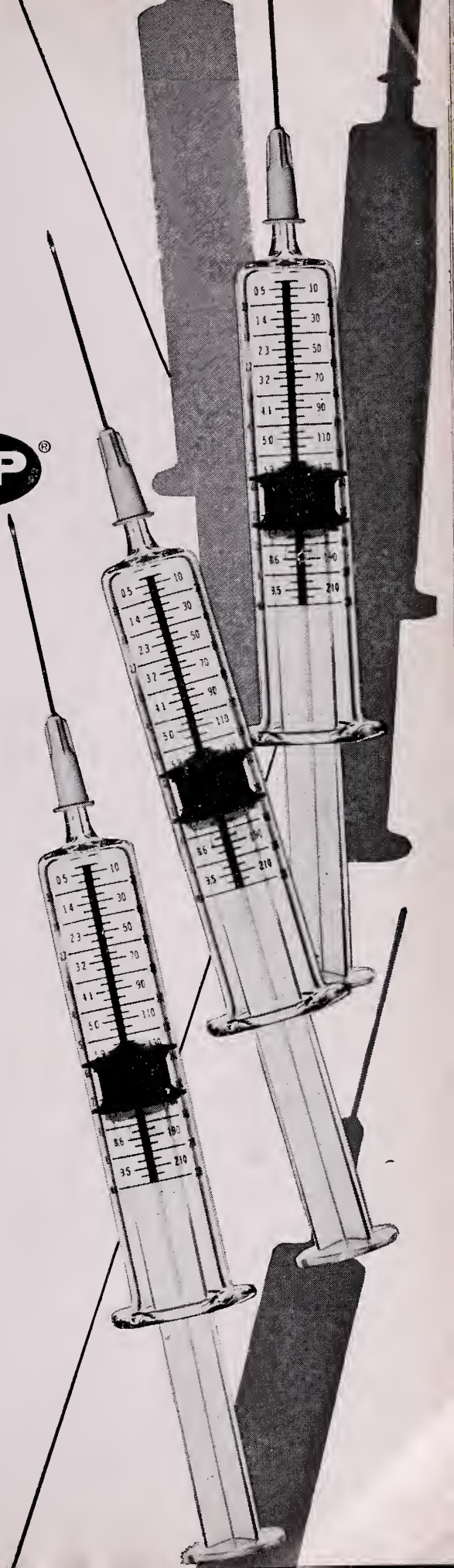

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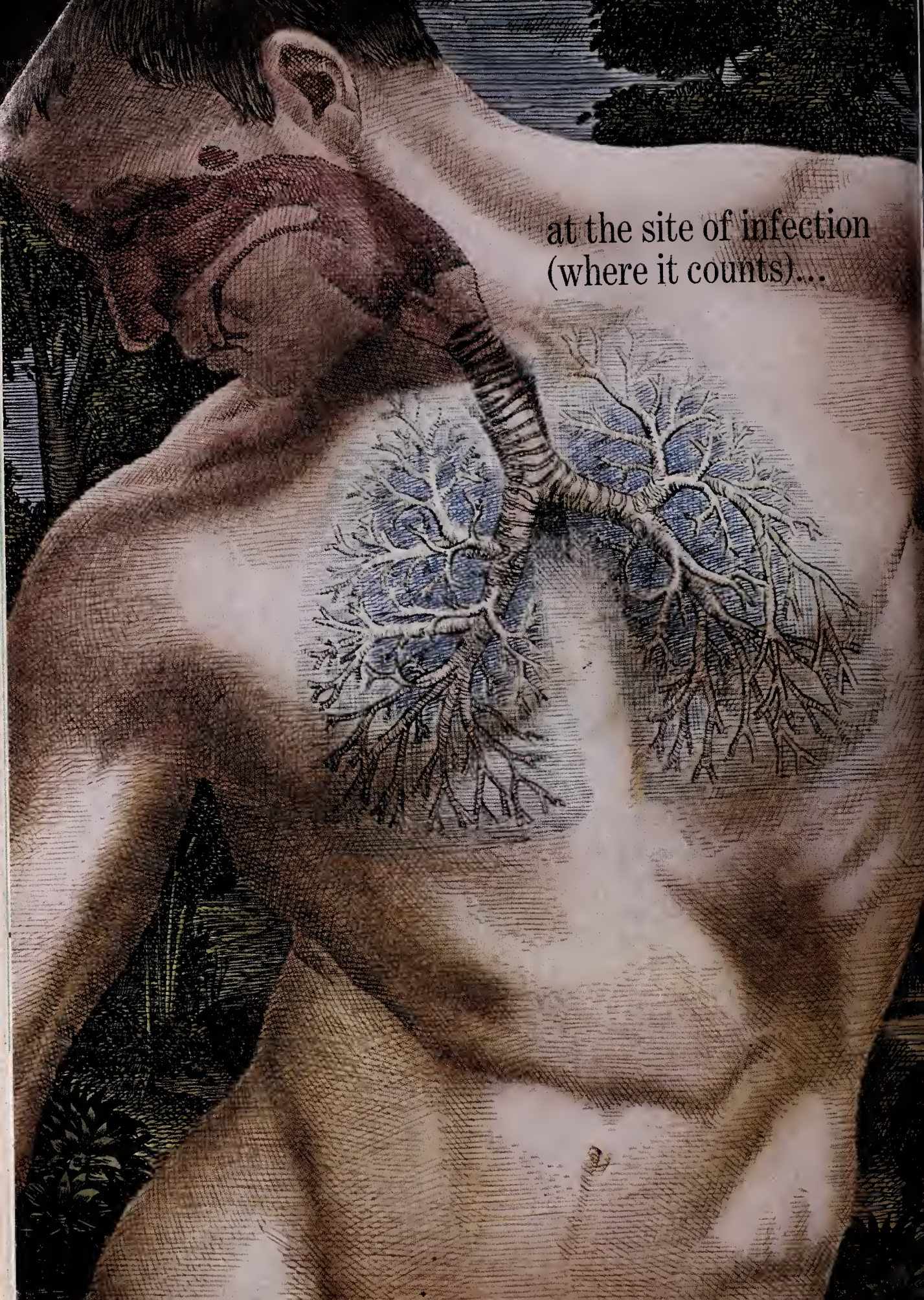
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The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

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Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cephal flocculation and thymol turbidity tests, elevated serum glutam oxalacetic transaminase levels, peripheral eosinophilia, and nc mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has n been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of th patients' families, who were not taking the drug, had episo of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels w determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared w those of a similar group of forty-four patients who received p icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilos and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penicil group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, w reported in 102 pediatric patients who received short-term (t day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients w comparable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the aliment tract; however, the normal intestinal gram-negative bacter flora is not appreciably altered by erythromycin drugs.

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For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients wit suspected lesion of syphilis should have a dark-field examinat before receiving antibiotics, and monthly serologic tests sho be made for a period of three months.

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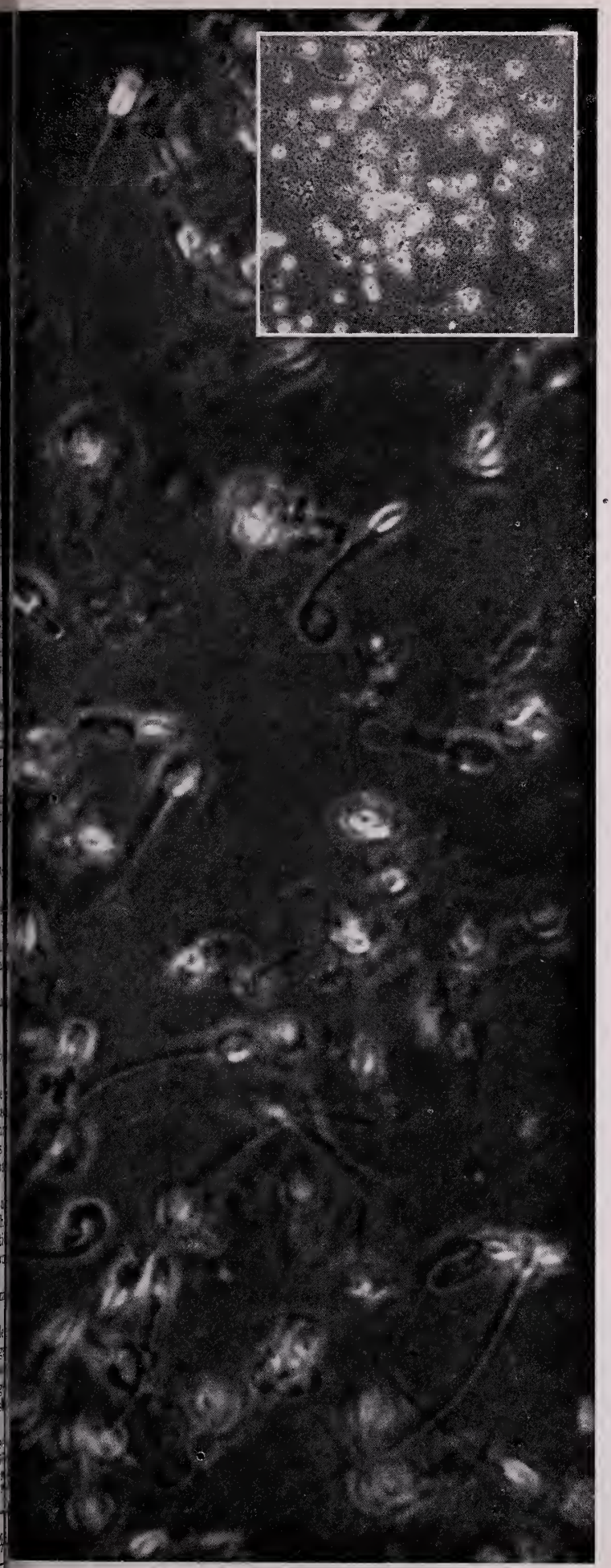
References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly



New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1— a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual mid-cycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

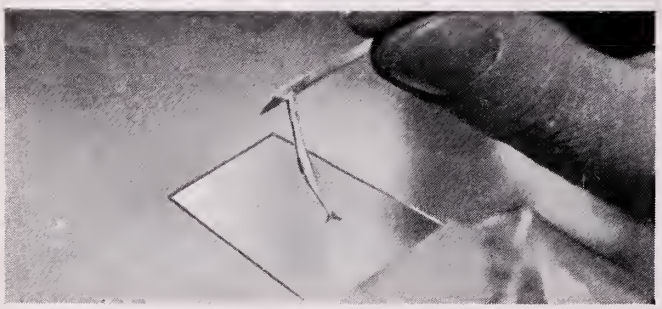
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

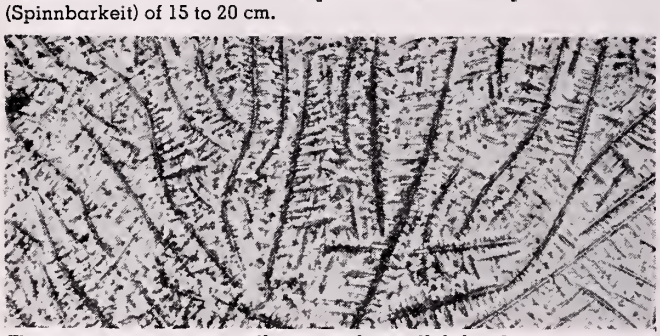
In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

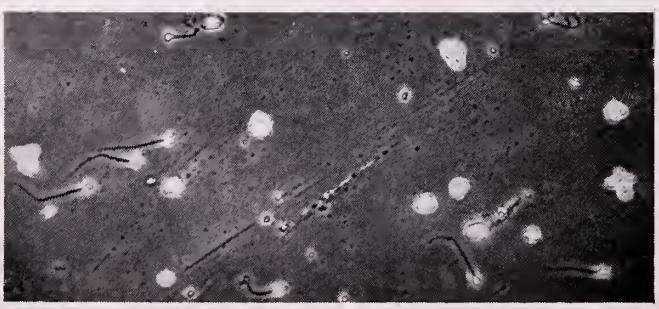
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



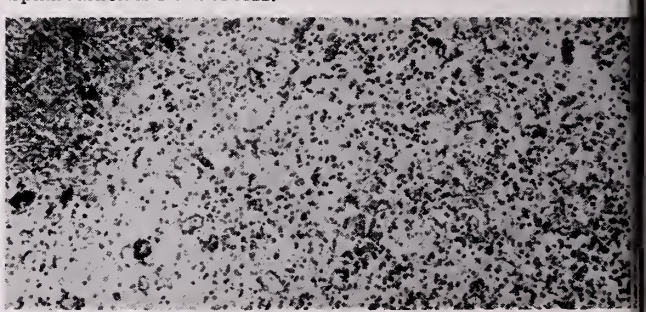
Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.



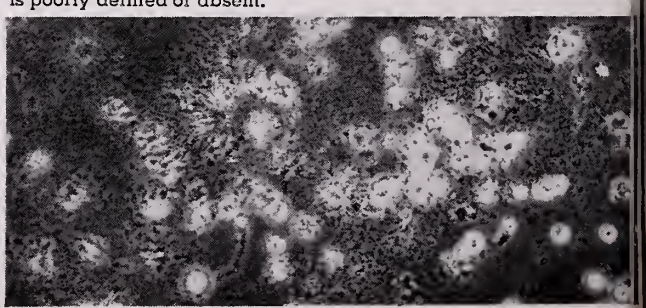
Spermatozoa appear healthy, are active and freemoving.

Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.

Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

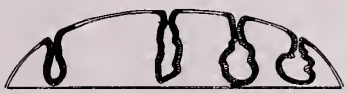


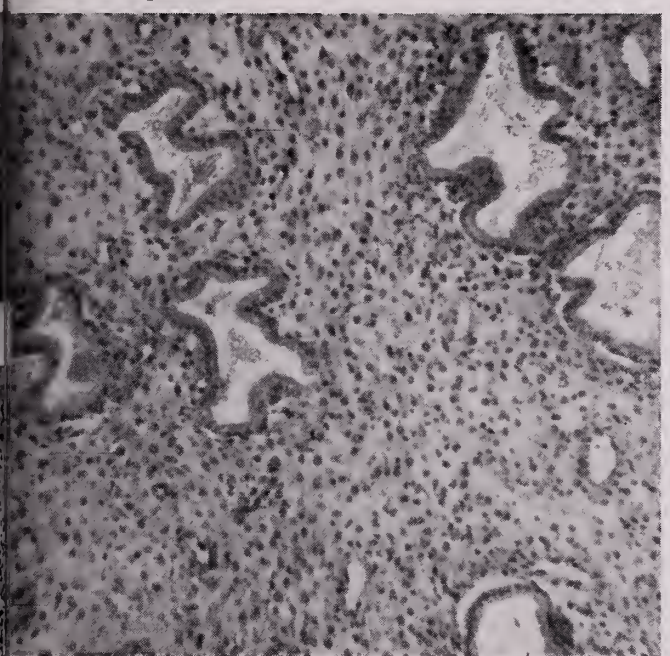
Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses—another possible protective mechanism

Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, the additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

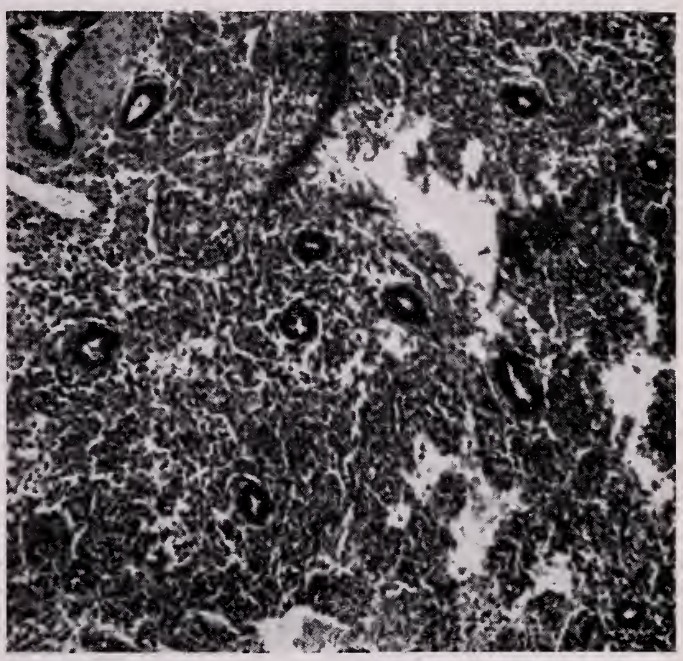
Endometrium of untreated patient





Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

new Norinyl-1® tablets
(norethindrone 1mg ē mestranol 0.05mg.)

See last page for contraindications, precautions, side effects and dosage.

effective fertility control on half the previous dosage

maintains ratio of the established norethindrone/mestranol combination

lower cost

new Norinyl-1®

(norethindrone 1mg. c̄ mestranol 0.05mg.) **tablets**

Reduction of oral contraceptive dosage to lowest effective levels h become a well-accepted principle of conservative medical practi In keeping with this view, Norinyl is now available in a new streng in which *both* norethindrone and mestranol are reduced 50 perce Studies show that Norinyl-1 achieves fertility control with only 1. mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., an oral contraceptive, is currently in use by over 2,000,000 wom Clinical experience now establishes that Norinyl-1 also amply mee the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: creased bromsulphalein retention and oth hepatic function tests, coagulation tests crease in prothrombin, factors VII, VIII, IX a X), thyroid function (increase in PBI and b nol extractable protein-bound iodine and crease in T^3 values), metapyrone test, pregn diol determination.

Other side effects reported to have occur in association with use of this drug are di ness, hirsutism, pains in legs, back, chest a abdomen, dysuria, drowsiness, vaginal charge, libido increased and decreased, e tions, hypermenorrhea, hypomenorrh increased appetite, G.U. infections, varic veins, abdominal fullness, acne, headac nervousness, allergies, blurred vision, pain eyes, and itching in eyes. *For complete clini data, see package insert.*

Dosage and Administration: 1. One tablet Norinyl-1 is administered orally for 20 d beginning on day 5 of the menstrual cy (Count day 1 of the cycle as the first day menstrual bleeding.) Repeat this dosage sch ule for each cycle. 2. If no menstrual per occurs after a cycle of treatment (20 tablets) which patient adhered to the schedule, the tient must be instructed to resume taking Norinyl-1 tablets 7 days after the previous day course was completed. For example, if last pill of a previous cycle had been taken a Sunday, then a new cycle of treatment sho begin on the following Sunday. 3. In the p partum woman, it is recommended that first cycle of treatment should begin on da of the first menstrual cycle. However, Norin should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 with mestranol 0.05 mg.)—Dispensers of 20 c 60 and bottles of 250 tablets.

norethindrone — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

The AMBAR SCRAPBOOK of Obesity Oddities

FACT & LEGEND

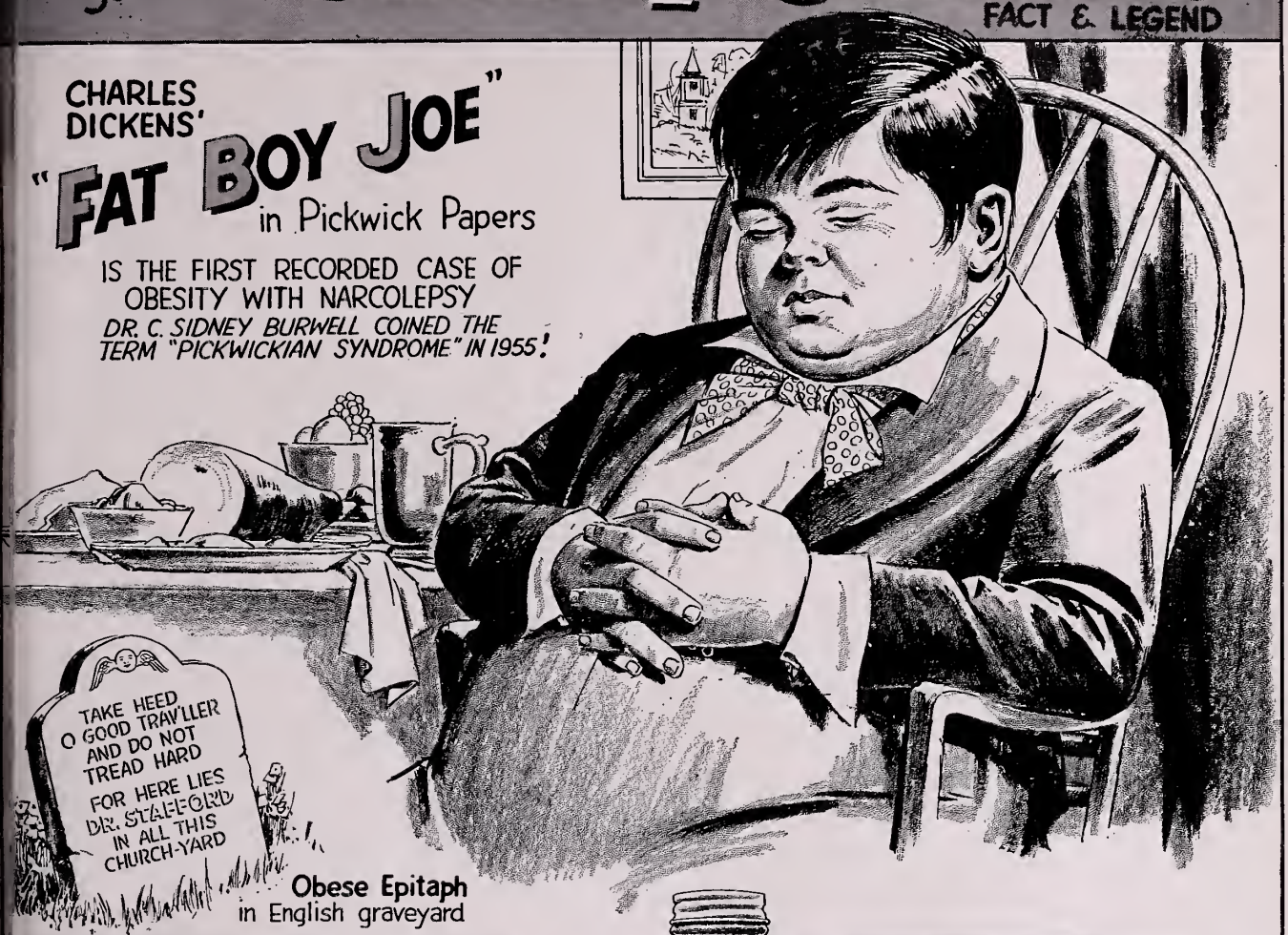
CHARLES DICKENS'

"FAT BOY JOE"

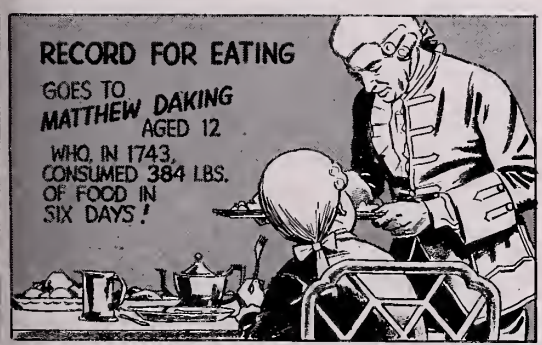
in Pickwick Papers

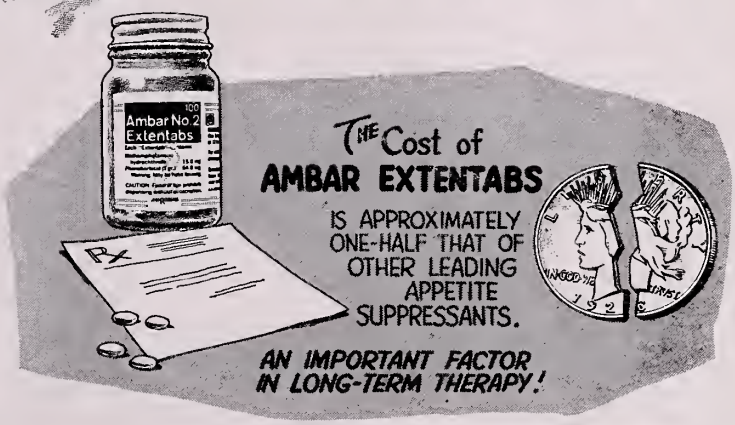
IS THE FIRST RECORDED CASE OF OBESITY WITH NARCOLEPSY

DR. C. SIDNEY BURWELL COINED THE TERM "PICKWICKIAN SYNDROME" IN 1955!



Obese Epitaph in English graveyard





ONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

ne Ambar Extentab before breakfast can lp control most patients' appetite for up 12 hours. Methamphetamine, the appe- e suppressant, gently elevates mood and lps overcome dieting frustrations. Pheno- rbital, the sedative in Ambar, controls irritability and xiety...helps maintain a state of mental calm and equa- mity. Both work together to ease the tensions that erode e willpower during periods of dieting.

so available: Ambar #1 Extentabs®—methamphetamine drochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warn- g: may be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

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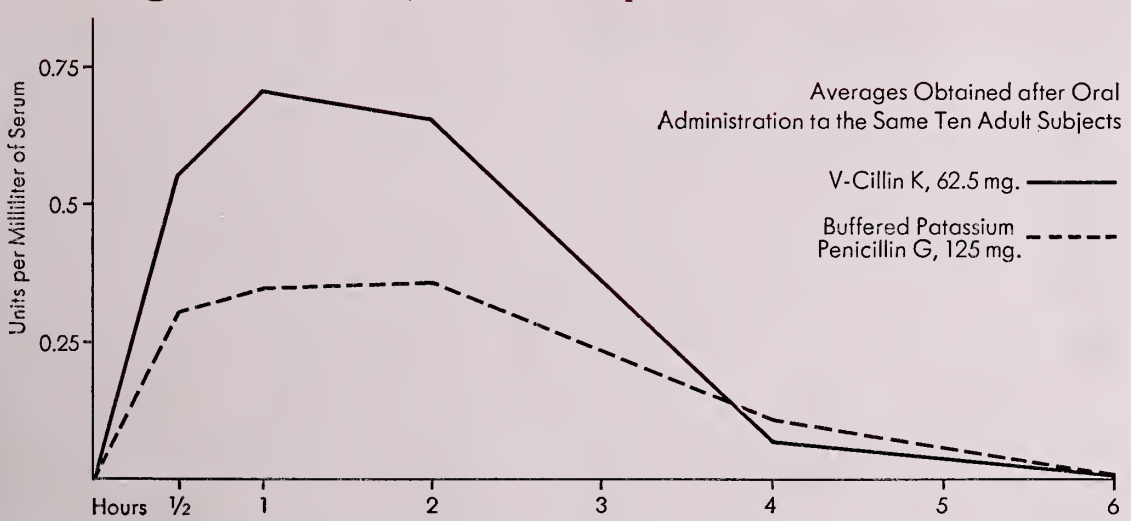
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Graup A MIC (mcg./ml.) Median	Range	Diplacoccus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Claxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

V-Cillin K® Lilly 700867

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses

Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemicolly improved form combines acid stability with immediote solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependoble penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinicolly proved V-Cillin K in teospoon dosage form. When mixed os directed, eoch 5 cc. (approximately one teaspoonful) will contoin 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treotment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophyloxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bocterial endocarditis after tonsillectomy ond tooth extroction in those potients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a potient with o history of penicillin hypersensitivity.

Warnings: In rare instonces, the use of penicillin moy couse ocute anaphyloxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reoctions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily ovoiloble for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalotion) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with parenteral dosage schedules, frequent evaluation of the renal hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory stu (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowt pencillin-insensitive orgonisms. In such coses, its administration sh be discontinued, and appropriate measures should be taken.

Adverse Reactions: Althaugh serious allergic reactions are much common with administration of orol penicillin than with intramus forms, manifestotions of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a si cant index of sensitization. The following hypersensitivity reac associoted with the use of penicillin have been reported: skin rc ranging from moculopapulor eruptions to exfoliative dermatitis; caria; and reactions resembling serum sickness, including chills, f edema, arthralgia, ond prostration. Severe ond often fatol onophy hos occurred (see Warnings). Hemolytic anemia, leukopenia, th bocytopenio, and nephropathy are rarely observed side-effects are usuolly ossociated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cil Pediatric, the usual dosage ranges from 125 mg. (200,000 units) times a day to 500 mg. (800,000 units) every four hours. For inf the daily dosage may be 50 mg. per Kg. of body weight divided three doses.

Beto-hemolytic streptococcus infections without associated teremia may be treated with 200,000 to 400,0000 units three tin day. Therapy should be continued for a minimum of ten days to pr development of rheumotic fever and/or other serious complica Dosage for routine streptococcus prophylaxis in patients with a h af rheumatic fever or congenital heart disease may be 200,000 once or twice daily. When such potients undergo tonsillectomy, extraction, or other minor surgery, the prophylactic dose shoul 500,000 units every six hours given two doys prior to surgery an two days postoperatively. If oral medication is not feasible on the of surgery, parenteral theropy should be considered. Mild to m ately severe pneumococcus pneumonia has been treated effec with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be every six to eight hours in conjunction with indicated surgical p dures.

For gonorrhea in moles, 500 mg. (800,000 units) every four hou three doses may be employed; in femoles, 500 mg. every four for six doses are recommended. Refroctory infections generolly res to o second treotment three to four days following completion c first. Treatment of gonorrheo with severe complicotions shoul individuolized, with prolonged and intensive treatment. Patients v suspected lesion of syphilis should hove a dark-field exominatio fore receiving penicillin and monthly serologic tests for a minim three months.

How Supplied: Toblets V-Cillin K, U.S.P., 125 mg. (200,000 unit bottles of 50 and 100; and 250 mg. (400,0000 units) and 50 (800,000 units), in bottles of 24 ond 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [0

Additional information ovailoble to physicions upon request. Eli Lilly ond Compony, Indianopolis, Indiona 46206.

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In peptic ulcer... antacid therapy with a new benefit

CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

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- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart

Don't let monilia cut broad-spectrum therapy short...

start with Tetrex-F®

tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

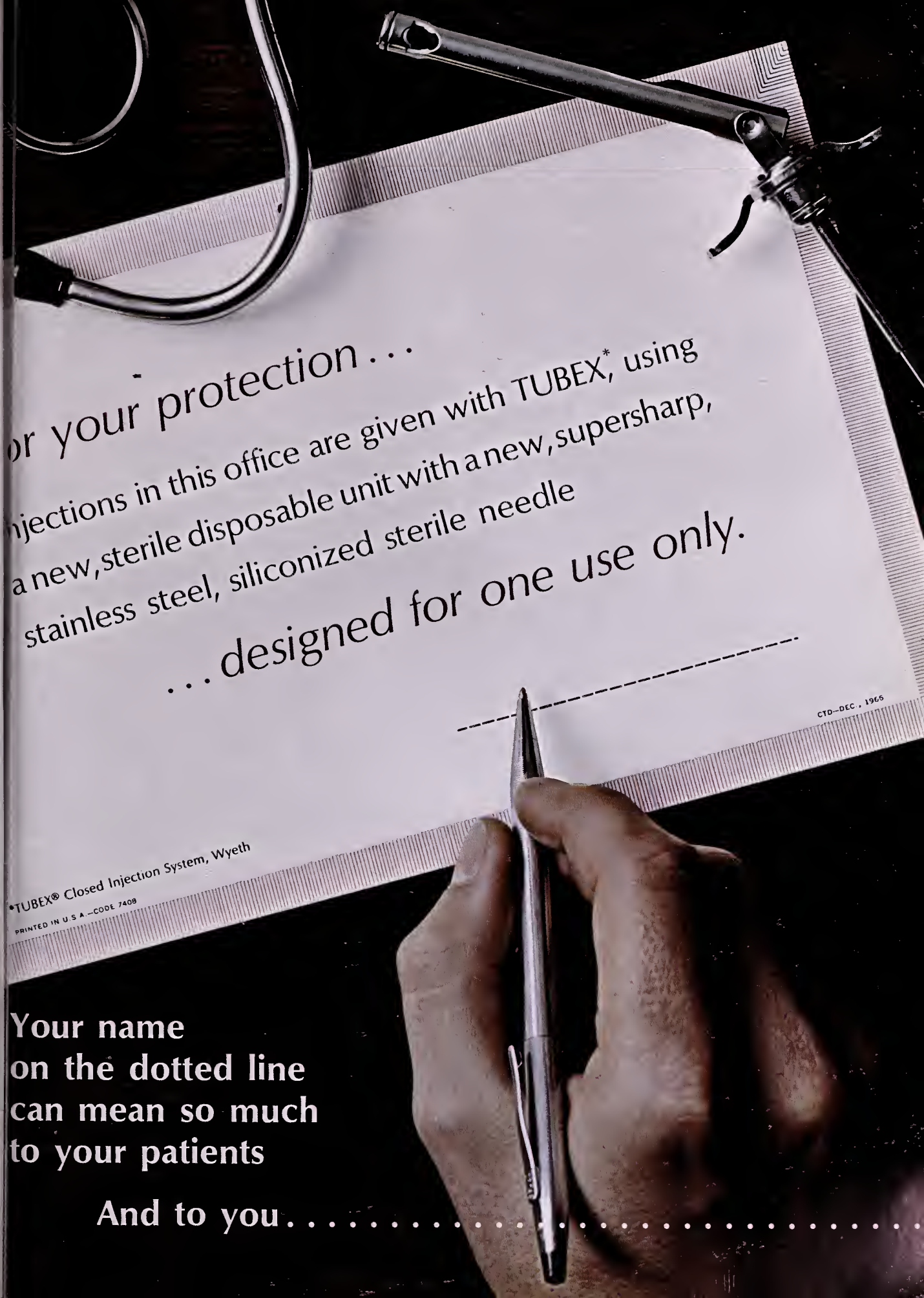
Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201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The WYOMING STATE MEDICAL SOCIETY

August 28 - September 1, 1967

Jackson Lake Lodge - - Moran, Wyoming

Photo Courtesy of Wyoming Travel Commission

The Rocky Mountain Medical Conference

What It Is — What It Does

The Rocky Mountain Medical Conference is a self-sustaining joint enterprise of seven state medical societies. The Conference was founded in 1935 and held its first biennial meeting in 1937.

The basic purpose is to bring Rocky Mountain area physicians together for an outstanding scientific program—and for renewed regional associations and friendship. The conference exists solely for these purposes. It does not elect officers, indulge in medical politics or consider resolutions or pronouncements. Meetings are held biennially, usually in conjunction with the host state's annual meeting, and upon invitation from a participating state association. The Chairman of the forthcoming host state's R.M.M.C Committee is Chairman of the Conference's "Continuing Committee" for the next two years and Chairman of that Conference. The Conference obtains operating revenue from registration and exhibit fees, and over the years has built up a small reserve fund.

Members of the Rocky Mountain Medical Conference for 1967 are:

COLORADO, IDAHO, MONTANA, NEVADA,
NEW MEXICO, UTAH
AND WYOMING

Registration At R.M.M.C

Registration at the Rocky Mountain Medical Conference is open to any Doctor of Medicine. Registration is not limited to physicians within the seven states which participate in managing the Conference.

A registration fee of $25.00 will be required of all Doctors. No fee will be charged physician members of the Armed Forces in uniform, nurses and guest speakers.

Each physician will be given an identification badge, and admission to all conference activities will be by badge only. Tickets will be on sale at the registration desk for all functions.

The R.M.M.C. Runs by the Clock!

The Scientific programs of the Rocky Mountain Medical Conference are run by the clock, to the minute. This has been true of the previous meetings, and it will be true this year.

All meetings will begin on time, all speakers will be required to begin their presentations exactly on time and none will be permitted to speak longer than as scheduled in the program.

All who attend the Conference are requested to assist the speakers and benefit themselves by being in the meeting room a few minutes in advance of the papers they wish to hear. Any member who arrives late to hear any particular paper is assured that he will miss part of that paper! Also, his late arrival would be disturbing to the speaker and the audience alike.

Hotel Reservations

Headquarters for the Conference will be Jackson Lake Lodge. Blocks of rooms and cottages have been set aside to accommodate doctors and their families attending the Rocky Mountain Medical Conference. There are other locations near the Jackson Lake Lodge for those who prefer. Write Jackson Lake Lodge, Grand Teton Lodge Co., Jackson, Wyo., for your reservation needs.

Pocket Program

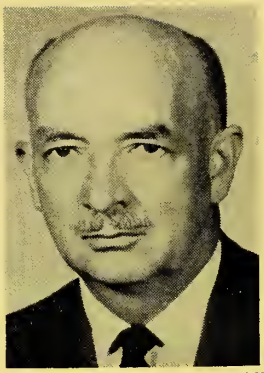
A final program for the 14th Biennial Rocky Mountain Conference, complete with additional details not available for this Program Issue of the Journal, will be published in pocket size and will be available to all registrants at the meeting. For additional program information, write to: Rocky Mountain Medical Conference, P.O. Box 2266, Cheyenne, Wyo.

Entertainment

There will be a California Wine Tasting Festival sponsored by the California Wine Growers and a cocktail party on Monday, August 28, starting at 6:15 p.m., followed by a Buffet honoring the Exhibitors. Cocktails and an outdoor barbecue is planned for August 29, starting at 5:30 p.m. This will be followed at 8:00 p.m. by a dance at the Lodge featuring Marvin Fritz and his Dixie Land and Tiajuana Brass. Cocktails will be served on Thursday night, August 31, starting at 6:15 p.m., followed by the Annual Banquet. The WYOPAC Luncheon will be held on Tuesday, August 29, at 12:00 Noon.

Woman's Auxiliary Program

Complete program of the Wyoming State Medical Society Woman's Auxiliary is printed herein. All functions of the Auxiliary are open to wives of physician registrants.

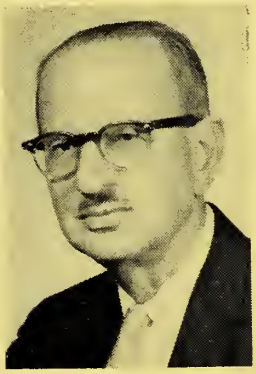


V. P. COLLINS, M.D., LLB
Professor of Radiology
Baylor University
College of Medicine
Houston

JOHN C. DONOVAN, M.D.
Department Ob-Gyn.
University of Rochester
Medical Center
Rochester, New York

BENJAMIN FELSON, M.D.
Department of Radiology
Cincinnati General
Hospital
Cincinnati

C. HENRY KEMPE, M.D.
Department of Pediatrics
University of Colorado
Medical Center
Denver



MAX LEVIN, M.D.
Psychology
New York City

Program

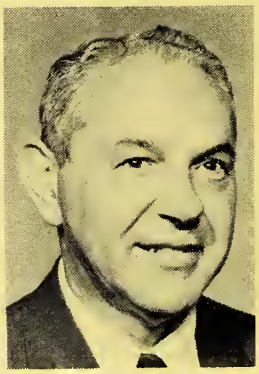
MILFORD O. ROUSE, M.D.
President
American Medical Association
(Banquet Speaker)

HENRY M. LEWIS, M.D.
Dermatology
Denver

HENNING
PONTOPPIDAN, M.D.
Anesthesiology
Boston

FRED REYNOLDS, M.D.
Orthopedics
St. Louis

Speakers



M. SOKOLOW, M.D.
Chief of Cardiovascular
Division
University of California
Hospital
San Francisco

SHELLEY A. SWIFT, M.D.
Pathology
Salt Lake City

PHILIP THOREK, M.D.
Surgery
Chicago

J. H. SAMMONS, M.D.
Highlands, Texas

Program

14th Biennial Rocky Mountain Medical Conference

and the

64th ANNUAL MEETING OF THE

WYOMING STATE MEDICAL SOCIETY

August 28-September 1, 1967

Jackson Lake Lodge, Moran, Wyoming

Monday, August 28

8:30 a.m.—House of Delegotes

11:30 a.m.—Nominoting Committee

2:00 p.m.—Reference Committee Meetings

Golf Practice for Tournament
Exhibits open all day

6:15 p.m.—Cocktoils ond wine tosting contest.

7:15 p.m.—Exhibitors Buffet

Stag Night — to follow Buffet

Tuesday, August 29

Golf Practice for Tournament

9:00 a.m.—House of Delegotes

12:00 noon—WYOPAC Luncheon

2:30 p.m.—House of Delegotes, continued

3:30 p.m.—Council Meeting

4:00 p.m.—Rocky Mountoin Medicol Conference Continuing Committee Meeting

5:30 p.m.—Cocktoils ond outdoor Barbecue

8:00 p.m.—Dancing to Marvin Fritz and his Dance Bond

Wednesday, August 30

Morning

Presiding: MYRON C. WADDELL, M.D., President
Colorado Medicol Society

8:30 a.m.—Today's Treatment of Recurring Warts
HENRY M. LEWIS, M.D.

9:00 a.m.—The Normal Chest That Isn't Normal
BENJAMIN FELSON, M.D.

9:30 a.m.—The Clinical Approach to Adolescent Patients
C. HENRY KEMPE, M.D.

10:00 a.m.—Recess to view exhibits

10:30 a.m.—The Case for Serum Calcium as a Routine
SHELLEY A. SWIFT, M.D.

11:00 a.m.—Back Pain
FRED REYNOLDS, M.D.

11:30 a.m.—The Treatment of Hypertension
MAURICE SOKOLOW, M.D.

Golf Tournament

Thursday, August 31

Morning

Presiding: PAUL A. CLAYTON, M.D., President
Utah State Medical Association

8:30 a.m.—The Meaning of Sex and Marriage
MAX LEVIN, M.D.

9:00 a.m.—Only an Appendix
PHILIP THOREK, M.D.

9:30 a.m.—The Enlarged Ovary
JOHN C. DONOVAN, M.D.

10:00 a.m.—Recess to view exhibits

10:30 a.m.—The Duration of Cancer Before Diagnosis
VINCENT P. COLLINS, M.D., LL.B.

11:00 a.m.—Common Cutaneous Cancers and Precancers
HENRY M. LEWIS, M.D.

11:30 a.m.—Causes of Increased Oxygen Requirements and Methods of Oxygen Delivery in Respiratory Failure
HENNING PONTOPPIDAN, M.D.

Afternoon

Presiding: JAMES R. KIRCHER, M.D., President
Idaho State Medical Association

2:00 p.m.—Orgasm in the Woman
MAX LEVIN, M.D.

2:30 p.m.—Some Fundamentals of Chest Raentgenology
BENJAMIN FELSON, M.D.

3:00 p.m.—Recess to view exhibits

3:30 p.m.—The Interpretation of the Exercise ECG
MAURICE SOKOLOW, M.D.

4:00 p.m.—The Treatment of Open Fractures
FRED REYNOLDS, M.D.

4:30 p.m.—Consent to Medical Treatment
VINCENT P. COLLINS, M.D., LL.B.

6:15 p.m.—Cocktails

7:15 p.m.—Banquet
Featured Speaker:
MILFORD O. ROUSE, M.D.

Presentation of Robins Award for Community Service

Presentation of Golf Trophies

Friday, September 1

Morning

Presiding: ALBERT L. VADHEIM, M.D., President
Montana Medical Association

9:00 a.m.—Treatment of Drug Overdose
HENNING PONTOPPIDAN, M.D.

9:30 a.m.—Physiologic Properties of Enzymes Important in Diagnostic Interpretation
SHELLEY A. SWIFT, M.D.

10:00 a.m.—Recess to view exhibits

10:30 a.m.—Breast
PHILIP THOREK, M.D.

11:00 a.m.—The Rubin's Test—Therapeutic Aspects
JOHN C. DONOVAN, M.D.

11:30 a.m.—Medical Problems of Adolescents
C. HENRY KEMPE, M.D.

Scientific Exhibits

American Cancer Society

American Medical Association Committee on Nursing

American Medical Association Research Division

Arthritis Foundation

Gottsche Rehabilitation Center

U.S. Department Health, Education, and Welfare

Wyoming Easter Seal Society

Wyoming Heart Association

Wyoming Public Health Department

Acknowledgment of Special Thanks

The Wyoming State Medical Society expresses a special appreciation and thanks to the following for their sponsorship of a guest speaker.

American Cancer Society

Eli Lilly & Co.
Merck, Sharp, & Dohme Postgraduate Program

National Foundation

The Earl and Bessie Whedon Cancer Detection Foundation

Wyoming Chapter American Academy of General Practice

Wyoming Heart Association

Wyoming Tuberculosis and Health Association

Auxiliary Program

Sunday, August 27

1:00 p.m.—Registration at Wyoming State Medical Society headquarters

Monday, August 28

6:15 p.m.—Cocktails

7:15 p.m.—Exhibitors Buffet

Tuesday, August 29

9:30 a.m.—Get acquainted coffee
For all wives of physicians attending convention

12:00 noon—WYOPAC Luncheon

5:30 p.m.—Cocktails and outdoor Barbecue

8:00 p.m.—Dancing to Marvin Fritz and his Dance Band

Thursday, August 31

8:30 a.m.—Executive Board meeting
Mrs. Roy Christensen, President, presiding

10:00 a.m.—Brunch honoring Mrs. Clifton Cloy Long, Jr., First Vice President, Auxiliary to AMA

12:00 noon—General Convention Meeting
Hints for a Healthier Skin
HENRY M. LEWIS, M.D., Guest Speaker

3:30 p.m.—Post convention Board meeting,
Mrs. Paul Yedinak, President-elect, presiding

6:15 p.m.—Cocktails

7:15 p.m.—Banquet

Technical Exhibitors

Abbott Laboratories
Americana Corporation
Armour Pharmaceutical Company
Astra Pharmaceutical Products
Ayerst Laboratories

George Berbert and Sons, Inc.
Bristol Laboratories
Burroughs Wellcome and Co., Inc.

California Wine Growers
Ciba Pharmaceutical Co.
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Dairy Council of Wyoming
Deseret Pharmaceutical Company
Donley Medical Supply Co.

Thomas A. Edison Industries
Empire-Harrington Surgical Supply
Geigy Pharmaceuticals

General Electric Co.
Gerber Baby Foods

Loma Linda Foods

Mead Johnson Laboratories
Merril Lynch, Pierce, Fenner and Smith
Muckle Professional Equipment Co., Inc.

Ortho Pharmaceutical Corp.

Parke, Davis and Company
Pfizer Laboratories
Physicians and Surgeons Supply Co.
Piper Aircraft

A. H. Robins Company, Inc.
Roche Laboratories
J. B. Roerig
William H. Rorer, Inc.
Ross Laboratories

Sandoz Pharmaceuticals
Schering Corporation
G. D. Searle & Company
Smith, Miller & Patch, Inc.
E. R. Squibb & Sons
The Stuart Company

U.S. Dept. of Public Health—Chronic Disease Division
U.S. Vitamin and Pharmaceutical Corp.
The Upjohn Company

Johnnie Walker Medical Electronics, Inc.
Winthrop Laboratories
Wyeth Laboratories
Wyoming Medical and Surgical Supply Co.

Rocky Mountain Medical Conference Continuing Committee

COLORADO: George P. Lingenfelter, Denver, Chairman; George H. Curfman, Carl H. McLauthlin, Bertram L. Pear, all of Denver; Eugene P. Ley, Pueblo.

IDAHO: Max F. Bell, Boise, Chairman; V. Ellis Knight, Kimberly; Wilbur H. Lyon, Coeur d'Alene; John R. McMahon, Pocatello; W. Wray Wilson, Coeur d'Alene.

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UTAH: Alan E. Lindsay, Salt Lake City, Chairman; Richard P. Middleton, Salt Lake City; R. Craig Clark, Provo; C. Hilmon Castle, Salt Lake City; Oliver L. Richards, Jr., Ogden.

WYOMING: John H. Story, Chairman, Lovell; G. R. Spiller, Thermopolis; Paul R. Yedinak, Rock Springs; D. G. MacLeod, Jackson; M. J. Smith, Cody.

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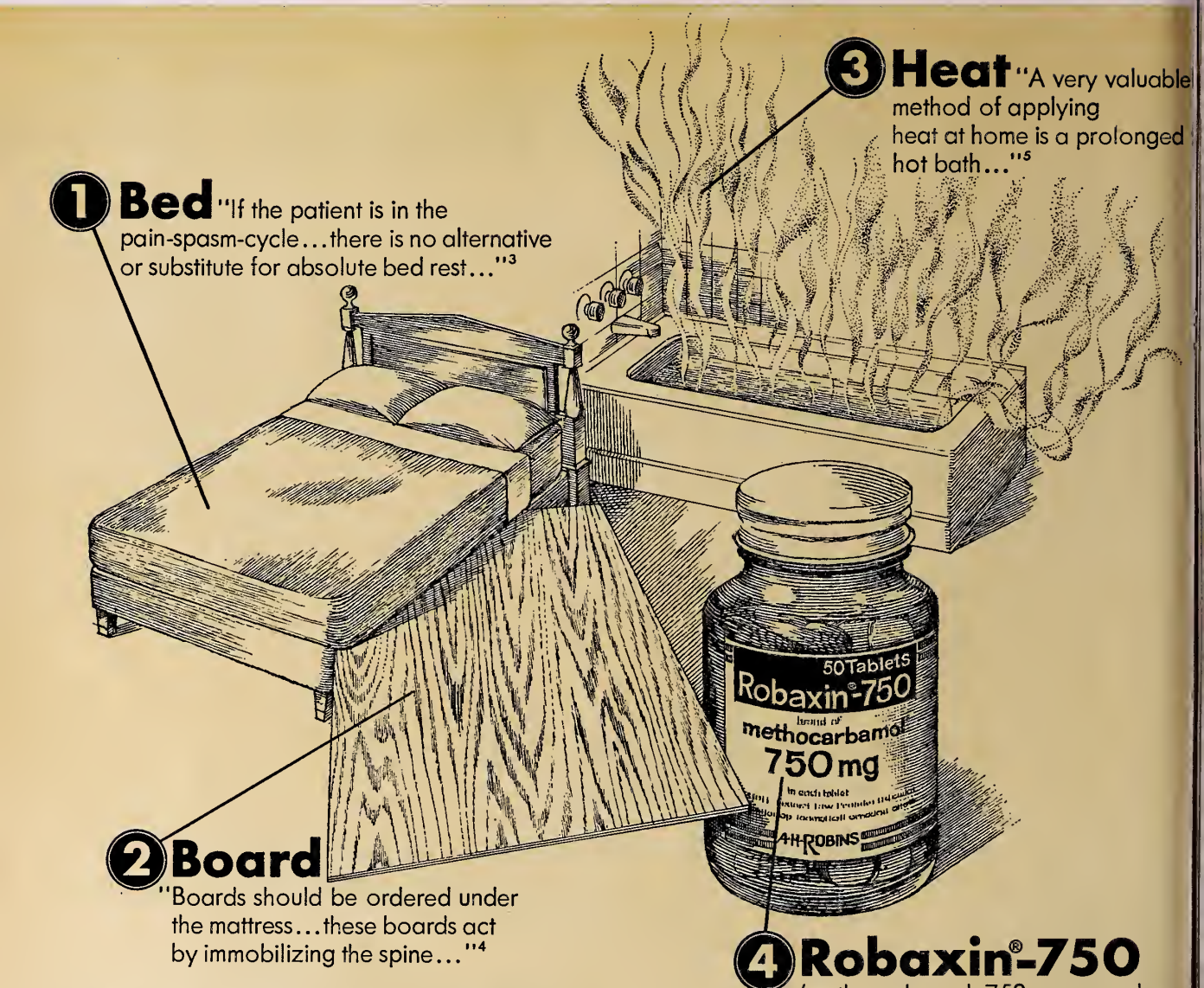
The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle spasm. **Contraindicated** in hypersensitive patients. **Side Effects** (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently. See product literature for further details. **Also available:** Robaxin® Tablets (methocarbamol, 500 mg.) Rabaxin Injectable (methacarbamol, 1 Gm./10 cc.)

References: (1). Godfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gottschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dakota J. Med. *18*:26, 1965. (5). Soto-Hall, R.: Med. Sc. *14*:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteapath. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

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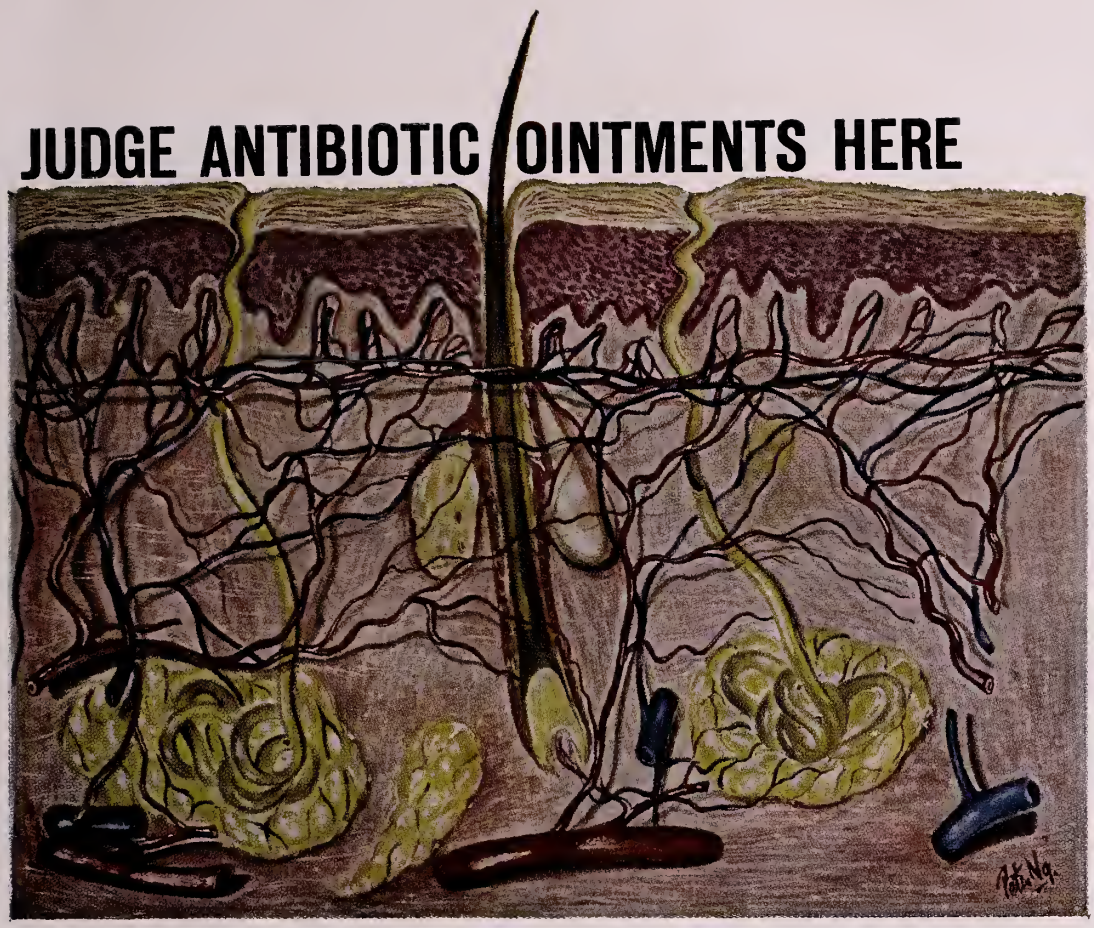

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e of or dependence on phenmetrazine hydrochloride have resulted in a psychotic illness manifested by restlessness, mood or behavior changes, hallucinations, or delusions. Do not exceed recommended dosage.
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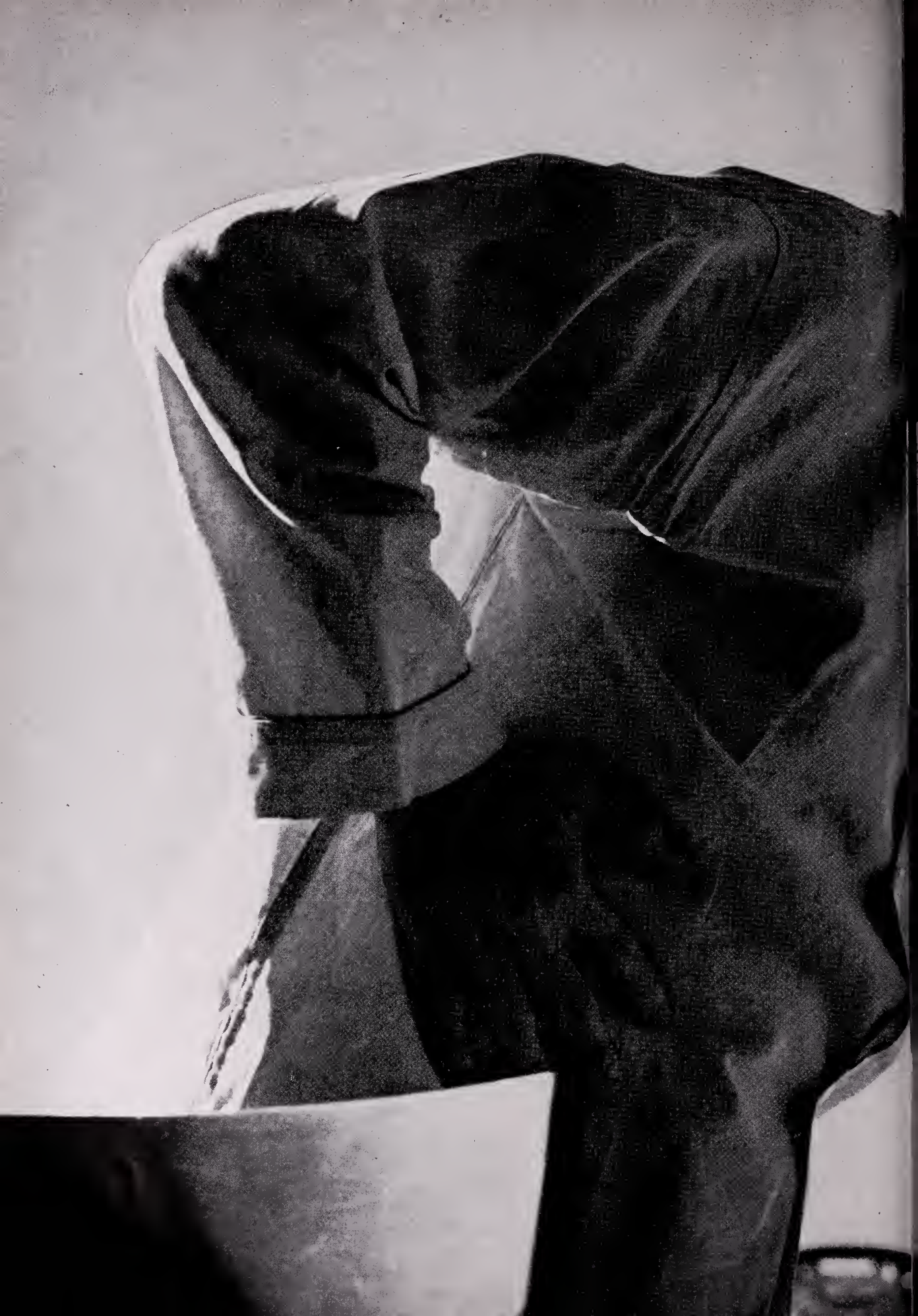

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"Thank You"

ONCE AGAIN Wyoming doctors are privileged to have this annual opportunity to sponsor the July issue of the Rocky Mountain Medical Journal. Similarly, as the Wyoming Editor, it is my privilege to thank the doctors of Wyoming for their wholehearted cooperation. Without their interest and enthusiasm this scientific effort would be impossible. Thanks are also due the Wyoming State Medical Society, the Wyoming Heart Association, the Wyoming Division of the American Cancer Society, the Wyoming Academy of General Practice, the Eli Lilly Company and Merck Sharp and Dohme. Support from these organizations not only helps to conduct the annual Winter Seminar but also helps in the preparation and publication of this annual issue.

We hope that you, our fellow colleagues of the Mountain States, will find some interesting reading within these covers.

Frank A. Barrett, MD

Changes in Medicine

IN THE SHORT TIME I've been in medical practice, there have been many advances and changes in medicine. These alterations in the medical way of life occurred in several categories—educational, technological, basic science discoveries, and sociological. The sociological changes are becoming more and more evident and, if present trends continue, there will no longer be a place for the private practice of medicine. The prime sociologic change is the involvement of the federal government in private medicine.

Back in the nostalgic horse and buggy days of early medicine the private practitioner knew relatively little about medicine, and certainly less about politics. But he kept his patients happy and was not the target of every political hopeful. As medical knowledge advanced, the standards of those involved also improved but frequently at the expense of personal popularity. The local, state, and national medical associations were formed and their main purpose has been to upgrade medical standards and to find newer and better cures for disease. This has been done by the associations and private enterprise without the intervention of government.

Now, however, the federal government has taken upon itself to try to tell the American physician how, when, with what, and with whom he should practice medicine. We have seen the beginning of socialized medicine in the United States with the passage of "Medicare" and the sleeper "Medicaid." The impact of these two laws will be felt from now on. Those of us who opposed the passage of these bills were not afraid we wouldn't get our full medical fee. Quite the contrary, it would have been easy to encourage the passage of legislation which would have made every physician wealthy. We did not oppose them because we were not interested in the health of our patients, as has been suggested by many politicians. Who is more interested in the health of the American people than the American physician? It is most unfortunate that we have been labeled "againers" because of our stand against "Medicare." The misinformed will continue to harangue us while they try to understand their frustratingly complicated federal medical program. A brief study of the philosophy of the physician may help the layman understand the reasons for our actions.

Getting an MD degree is a complicated process. It is an expensive, tiring, and time-consuming endeavor. Most physicians and their families were required to endure many hardships in order to complete medical school. Needless to say many potential physicians cannot tolerate the pressure and drop out along the way. Those who do complete their training are strongly motivated to get their degree and are independent, self-reliant, and usually very proud. Most physicians are jealous of their medical independence and main-

tain an active interest in all aspects of medicine.

Therefore, when the government "give away" programs were started in relation to medicine, they were carefully studied by physicians with a special interest in this area. It became obvious to them that there would be better, more efficient, methods of providing medical care to the needy than through the wasteful channels of the federal government. Our arguments were ignored and now we have "Medicare" and, in most states, "Medicaid." With the many requirements, forms, and legal aspects of "Medicare," it would appear that the health of the patient is less important than seeing that all the forms are properly completed and that the utilization committee has duly met and filed its report. With the number of federal employees now required for the observation of "Medicare" functions, it is getting as bad as the Bureau of Indian Affairs, where I understand there are almost as many employees as there are Indians.

These are a few of the reasons why the American physician has been opposed to federal medical plans. The waste and inefficiency caused by those who don't fully understand the needs and problems make it too expensive. We feel that private enterprise can better handle the personal needs of the individual and at the same time make a profit and pay a tax on those profits. We feel that those who are qualified should be the ones to decide what should be done and then implement any needed action. In a similar manner, we would all agree that the President and Congress should decide if we will fight a war and whom we will fight. But it should be up to the commanders in the field to decide how each battle should be fought and what equipment and personnel are needed.

A great deal of noise was made by the government a few years ago when they bought five to six million dollars worth of drugs from an Italian firm. They were quick to inform us how much cheaper the drugs were than they would have been if bought in the U. S. and how much more we got for our money. Our government failed to mention that the formula for these drugs had been stolen from a U. S. drug firm that was trying to recover the cost of the research and development of the drug by the profit from its sale. In essence our government has encouraged piracy, or at least made it pay.

We have been told that we should use generic drugs because they are cheaper than brand names, and we are told that they are just as good as the brand names. This is obviously not true, and even now the government is directing that certain generic drugs not be used in our armed forces as the brand names have a superior effect, and many of the generic drugs are totally ineffective. I know I don't want the responsibility of giving unknown generic drugs to my patients. Certainly another factor relating to generic drugs is the incentive to develop new and different drugs. If the profit incentive is removed from the sale of a new and better drug, what will motivate the expensive research and development of newer drugs?

We will continue to find governmental controls increasing in our daily lives. Programs of "Judicare" and "Educare" have been proposed which will continue this spread. The government has required that the automobile industry produce safer cars. This is certainly a good idea, if it is possible. But why do they ignore the fact that the most dangerous thing about a car is the driver? Perhaps the reason is that the driver is a voter and must not be intimidated—even if he is killed!

What can we as physicians do to halt this spread of socialism? It certainly appears that we can't get all of our political friends elected, at least on a national level. I think we must continue to care for the medical needs of our patients and perhaps instill in them some of our philosophy of self-reliance. We need to become more active in local and national politics as well as non-political functions. We must maintain our activity in our county, state, and national medical organizations. There are those who argue that these organizations are run by cliques. Perhaps they are right, but they are composed of men who are willing to spend the personal time and money that is necessary to make these organizations work. If we are dissatisfied

with these organizations, then it is time we became more intimately involved with them and try to change them to ways we feel are better.

Our free enterprise system will become progressively harder to maintain but if, as physicians, we continue to preserve our independence and self-reliance perhaps we can help to keep the American free enterprise system working.

Ray K. Christensen, MD, President
Wyoming State Medical Society

AMA: Serving the American People

If you were to ask the average layman, "What has the AMA done for you today?" perhaps the first answer would be "Nothing." They would, instead, say "The AMA is for the doctor!" "It's busy in politics, and about the only time it affects me is when I get mad, when I read it's come out once more *against* something." Actually, nothing is further from the truth. We all know we are *for* many more things than we are against, and the thing we are *for* above all else is continuance of a system of medicine that has as its core purpose the good health of the people of this nation.

Perhaps surprisingly, the work of the AMA touches everyone in almost every aspect of our daily lives. We are involved in studying, suggesting *improvements* in or seeking legislation to protect the people of this nation in the use of—well, you name it—the toothpaste you used this morning, the soap you showered with, the breakfast you ate, the car you drove to the office, the team sports your kids will play at school today, their school lunch, the handicapped people in all areas of employment, the lipstick and hairspray your wife uses, the dyes in your clothes, the water you drink—the very air you breathe! All of these and many more come within the spectrum of study of one of the AMA's more than *100 councils and committees.*

There are more than 800 physicians, working without remuneration, who serve on these councils and committees. They're scattered across the country. From them, as well as from scientists, manufacturers, hospitals, retailers, and consumers, the 1,000 staff employees of the AMA gather a vast amount of data on new products, new findings and new methods, correlating, evaluating and summarizing it, and then reporting the findings to all of its members.

This is the primary role of the American Medical Association. Its basic objectives today are the same as those written into its Constitution more than a century ago: "to promote the science and art of medicine and the betterment of public health."

The fact is that the AMA spends 65 per cent of its annual budget on scientific activities, and less than 9 per cent of the budget on socio-economic activities. The often-mentioned "big lobby" of ours in Washington consists of exactly five men! Moreover, most of their time is occupied with providing basic medical information *at the request of members of Congress* on the large number of bills, in each session, involving the health of the public. Last year the AMA supported 30 bills and opposed only 11 bills.

Now, let's look briefly at what the AMA is and how it got this way. How big is it? Who really *runs* it? Well, most people would be surprised to know that the most powerful member of the AMA is the family physician. The AMA is democratically organized. It's a federation of 54 state, commonwealth, and territorial medical societies. These, in turn, are made up of more than 1,900 component medical societies. The representative government principle applies throughout. Each physician has a voice and a vote in electing state delegates.

There are about 215,000 physician members of the AMA today, approximately 75 per cent of the nation's 300,000 doctors. A physician must be a member in good standing of his state medical society in order to join the AMA. While the AMA dues are $70.00 per year, *we all get more than our money's worth.*

We might use two rather general headings for the work done by the AMA staff and scientific councils for the benefit of the physician. The first would be "postgraduate

learning"; the second, "individual service."

In addition to the two general meetings each year, the AMA sponsors or co-sponsors something upwards of 1,000 medical meetings annually. These provide the physician with a magnificent selection of continued learning in his field. He receives, also, his weekly copy of the Journal of the AMA, the most widely circulated medical journal in the world, and the AMA News. By AMA membership, he can choose one of 12 specialty journals as well. In addition, there is a lengthy list of services at his disposal from the staff of the AMA; these services cover everything from free research aid from one of the largest medical libraries in the world, to a film rental library, to health pamphlets for patients. In short, if it has something to do with medicine and will aid him in caring for his patients and keeping abreast of current achievements, chances are he can get it from the AMA.

Now, let's look at a few of the more direct services the AMA provides to the general public. AMA groups evaluate foods and special food products, pesticides, and chemicals to assure their safety. They help place physicians in communities and rural areas. The AMA encourages high standards in advertising and labeling of food products and drugs. It works closely with schools and educators to help provide for school health and safety. It conducts public educational campaigns on traffic safety, the use of seat belts, ways to reduce accidental poisonings, and many other subjects. It works with industry to control health hazards on the job and to promote rehabilitation of disabled workers. It alerts the public to the importance of preparing for any emergency resulting from a national disaster. It helps rural communities improve their health environment. It develops standards for nursing homes to assure safe care of patients.

These services and many more are not new with the AMA—they are merely continuance of our history. Over ninety years ago it urged establishment of state boards of health. As early as 1912, it urged establishment of a department of health in the President's cabinet. The AMA also recommended creating the U. S. Public Health Service, the Federal Food and Drug Administration, and in 1948 participated in the development of the World Medical Association. In 1882 the AMA urged state legislatures to introduce hygiene as one of the branches to be taught in the schools.

The AMA has supported hundreds of legislative bills such as the Kerr-Mills Law, the Hill-Burton hospital construction program, the passage and strengthening of the pure food and drug laws, FHA mortgage guarantees to stimulate construction of more nursing homes, civil defense programming and medical stock-piling, water pollution control laws, incentive for private retirement programs for the self-employed, smoke abatement laws, proper labeling of household chemicals, air pollution control laws, grants-in-aid to universities, hospitals, laboratories and other public or non-profit organizations to strengthen their programs of research and research training in sciences related to health. And, since the passage of Medicare, the AMA has worked to help shape regulations in the best interest of the American people. Furthermore, it was because of the persistent and untiring efforts of representatives of the AMA, that amendments were made to the Heart Disease, Cancer, and Stroke Law, which made it more effective and compatible with good medical practice patterns than it was in its original form.

Finally, a new wing has been built on AMA headquarters in Chicago. This eight-story building provides a home for the AMA's new Institute of Biomedical Research. The Institute concerns itself with intensive and fundamental study of life processes, particularly as related to intracellular mechanisms.

We should better know our National organization of which it is an honor and privilege to be a part. Without the support of the County and State Medical Societies, as well as individual physicians, we could not have the fine American Medical Association that has served us and the people of America *so well* for 120 years.

W. Andrew Bunten, M.D.*
Cheyenne, Wyo.

*Immediate Past Vice-President, AMA.

CLINICAL PATHOLOGICAL CONFERENCE

WINTER SEMINAR, CHEYENNE
MARCH, 1967

Moderator: Richard McCleery, M.D.
Pathologist, Cheyenne
Discussant: Roy W. Holmes, M.D.
Internist, Casper

Case Presentation:

Dr. McCleery: This 39-year-old housewife was admitted to De Paul Hospital in February, 1964, with complaints of left back and leg pain since a fall in 1963, swelling of the lower legs for about two years, and chronic diarrhea over the past five years.

In October 1963, she had fallen on a slippery floor in her home ("did the splits"), and since that time she had recurrent cramping pains of the left medial thigh and both calves. In January 1964, she consulted her home physician who found a serum calcium of 2.6 meq./l. (5.2 mg. %). She was placed on 50,000 units of vitamin D and calcium gluconate daily, and since that time had had some pain in the left groin on walking but no more muscle cramps. For about two years she had had swelling of her feet.

She stated that she had weighed 105 pounds when first married. With her first pregnancy in 1949 she had some very large bulky, sour smelling stools but no weight loss, and these symptoms cleared up after conclusion of pregnancy. She maintained her weight until her second pregnancy in 1955, at which time she had considerable vaginal bleeding, some loss of appetite, and generalized malaise throughout the whole pregnancy. She lost some weight at this time but not a profound amount. In 1956 with her third pregnancy she had a severe problem with nausea, loss of appetite, and vomiting, but no diarrhea. She lost weight to 80 pounds. Since then she had never been well. In 1959 with her fourth pregnancy she was very sick, and this pregnancy terminated in miscarriage. After this she developed the chronic diarrhea which has been present since. It is an episodic diarrhea, being present for a few months and then disappearing for a few months only to recur again. Her weight varied over a fairly small range but she had never been higher than 96 pounds. The diarrhea was noted to be watery at times but also frothy and foamy at other times with a noticeable sour odor.

Her left ovary was removed in about 1957, and she had had irregular menstrual periods since that time. She had a hemorrhoidectomy in 1963, with improvement in the diarrhea symptoms. She did not use alcohol or tobacco.

Physical examination revealed a small, pleasant, intelligent, Spanish-American woman who appeared to be chronically ill. She was 5'2" in height and weighed 89 pounds. Pulse was 76, respirations 16, and blood pressure 106/68. A few petechiae were noted in the skin. There were no abnormalities of the eyes, ears, nose or throat. There were no abnormal masses in the neck. The breasts were free of masses. The lungs were clear to auscultation and percussion. The heart had a regular sinus rhythm with no murmurs. The liver and spleen were not palpable. There was some tenderness in the right costovertebral angle on percussion which appeared to be related to the twelfth rib. There were two lower abdominal incisional scars. There was 2+ pitting edema of both ankles to the mid calf, and tenderness of the hamstring muscles. Trousseau's sign and Chvostek's sign were negative. The reflexes were active but not hyperactive.

Hemoglobin was 14.2 grams, hematocrit 45%, and white blood count 6,900 with normal differential. The red cells were noted to be slightly hypochromic. Urinalysis was negative with a specific gravity of 1.021. The serum calcium was 7.2 mgm. %, and total serum protein 5.2 grams %, with 3.6 grams of albumin and 1.6 grams of globulin. The alkaline phosphatase was 5.0 units (normal 0.8 to 2.9 units). Twenty-four hour urine calcium was too low to read. PSP test showed 40% excretion in 15 minutes, 70% total excretion in one

hour, and 83% total excretion in two hours. PBI was 3.9 micrograms. Nile blue test on the stool was strongly positive. Fasting blood sugar was 86 mgm.% (Folin-Wu), and prothrombin time 36 seconds with control of 13 seconds.

Hourly urine phosphorus determinations were done before and after the injection of parathyroid hormone. The two control periods before injection of the hormone were 52 and 36 mgm. per hour. Hourly determinations after injection of hormone gave values of 27, 13, 18, 25, 26, and 42 mgm. per hour. 3.8 grams of d-xylose were excreted in the urine in five hours after a 25 gram oral dose.

X-rays of the lumbo-sacral spine revealed an anomalous lumbo-sacral joint with partial lumbarization of S-1. Bone density seemed to be sub-par for the age of the patient. Films of the right lower ribs disclosed no abnormalities and films of both hands and wrists gave no definite indication of abnormality. Bony structures everywhere were noted to be relatively delicate but the cortices and trabecular density were felt to be adequate. On upper GI series the stomach appeared normal. The duodenal bulb showed diffuse and moderately prominent exaggeration of the rugal folds. The jejunum was visualized on only one or two of the films and there appeared to be some loss of the normal mucosal pattern. The transit time of the barium through the small intestine was within normal limits.

After intramuscular vitamin K the prothrombin time was 15 seconds with a control of 13 seconds. Operation was performed.

Discussion

Dr. Holmes: Dr. McCleery has read the protocol. We have for consideration a case of intestinal malabsorption which worsened with repeated pregnancies. The patient never quite returned to previous health status after each of them. Fever is not mentioned as a prominent symptom nor was temperature recorded on admission data. Dr. McCleery, was fever present on admission? Was fever a symptom earlier?

Dr. McCleery: No, fever was not recorded nor was it noted earlier.

Dr. Holmes: The history, physical and laboratory data are replete with symptoms and signs of malabsorption. For brevity, I will include here the edema, weight loss, petechiae, frothy foul smelling stools, intermittent diarrhea, hypocalcemia, positive Nile blue test, border line low PBI, prolonged prothrombin time and the response of the latter to Vitamin K given IM. Also, the d-xylose excretion of less than 4.5 gm. of test dose.

Here I would like to add that the latest edition of Harrison's *Principles of Internal Medicine* states that standardization of Parathormone is difficult and "recent batches" have been substandard in their ability to produce effective and consistent responses. This may account for the apparent case of pseudo hypo-parathyroidism based on the lack of response to injected Parathormone noted here. In the individual with normal parathyroid glands 5-6 fold increase in the urine phosphorous is expected after parathormone injection. In hypoparathyroidism there is an expected 10 fold or more increase. With pseudo hypo-parathyroidism, there is no increase, or at most a twofold increase, in urinary phosphate.

The pseudo hypo-parathyroid patient is round-faced with short, thick fingers and most often shows mental deficiency. The hands frequently show dimples where the knuckles should be. The rest of the clinical and chemical picture is like hypo-parathyroidism. I rule out pseudo hypo-parathyroidism in our case because it does not fit with the overall picture of malabsorption and the obvious reference to her intelligent manner and delicately structured bones. The fact that she could have had a secondary hypo-parathyroidism however, from malabsorption, is evident from decreasing calcium, increasing serum alkaline phosphatase and the vaguely alluded-to osteomalacia on the films, plus the obvious clinical manifestations of muscular cramps. This is seen frequently in prolonged malabsorption. May we now have the x-rays?

Dr. Raymond Dixon (Radiologist): I will restrict my comments to the study of the upper gastrointestinal tract and the small bowel (Fig. 1). The duodenal bulb yielded diffuse exaggeration of folds reflecting duodenitis. A slight segmentation was seen in the distal ileum, and the transit time was usual. The most significant finding was that of large mid-jejunal folds with coarsening of all mucosal workings.

Fig. 1. Roentgen appearance of small intestine.

Dr. Holmes: What are the possible causes of the malabsorption syndrome as seen in this woman? In the classification of malabsorption there are primary causes due to epithelial disease and these are divided into acute (self limited) and chronic types. I will rule out the acute forms, e.g. infections, drugs and radiation therapy, because nothing indicates these in the protocol. The chronic forms include some good possibilites. I will, however, rule out tropical sprue (hoping this woman didn't come up from Central America or thereabouts). Was her home in Wyoming, Doctor?

Dr. McCleery: Yes, and she had never resided elsewhere.

Dr. Holmes: I will rule out protein-losing enteropathy per se because the proteins do not seem to be low enough. The ones I have read about have had albumins usually below 2 gms. %. Besides, here again I can get nothing from the protocol to indicate any tests being done to check for protein loss in the stool such as the one labeled PVP (polyvinyl pyrrolidine) excretion test. Chromium 51 labeled albumin is a new and superior test agent. B lipoprotein deficiency and disaccharidase deficiency are likewise ruled out. There is nothing except malabsorption to indicate these diagnoses and nothing in the protocol to help differentiate them. Hypogammaglobulinemia, when acquired, may be accompanied by malabsorption, but the congenital form is not. With the acquired form there should be a history of repeated upper respiratory infections, so this is ruled out. Dr. McCleery, was protein electrophoresis done?

Dr. McCleery: No.

Dr. Holmes: This leaves the primary type of malabsorption disease of adult celiac disease (nontropical sprue, gluten enteropathy). This remains a prime consideration. If now we go to the secondary types of malabsorption we have many causes. Those due to intrinsic bowel wall alterations:

1. Intestinal tuberculosis: Granted this is a possibility, but since the clinician did not apparently consider this with negative chest x-ray and omission of tuberculin test, I will discard it. I will admit it is always dangerous to rule out tuberculosis, especially in CPC's. Just when you are looking for the esoteric, "ivory tower" disease, you are tossed a dressed-up doll-like protocol representing such a problem, but turning out to be a common, ordinary, garden variety disease such as intestinal tuberculosis.

2. Regional enteritis is a prime suspect and I will return to this.

3. Amyloid disease, lymphoma, mesenteric artery insufficiency and collagen vasculitis I will rule out. (If fever and pain was not mentioned as a feature of illness, its absence is very unusual in the arterial disease and vasculitis.) There is no evidence of scleroderma either.

4. The next category of secondary malabsorption is due to obstruction of intestinal lymphatics: Intestinal lipodystrophy (Whipple's disease) I believe is ruled out by absence of arthritis. The quartet of progressive wasting, diarrhea, arthritis, and skin pigmentation does not seem to be present even though the latter would be almost impossible to distinguish. The classification of lymphoma comes to mind again. Intestinal lymphangiectasia is a fair possibility. I will return to this. There is no evidence of heart failure.

5. Anatomic alterations: Post-gastrectomy syndrome, diverticula of small bowel, enteric fistulae and blind loops, vagotomy and bowel resections are ruled out unless prior surgery was a massive resection.

6. Hormonal: There is no evidence to substantiate these diagnoses of Addison's disease or diabetes. Hypo-parathyroidism, however, can cause malabsorption so I am caught in my own knot. Is the hypo-parathyroidism seen here secondary or primary? Are the primary symptoms of increasing neuromuscular excitability due to decreasing calcium? Forty per cent of the patients with hypoparathyroidism are first seen because of seizure history. Mental changes are frequent, such as anxiety, tension, psychosis. Some are mild symptoms such as fatigue, and paresthesia. Chyostek's and also Peroneal and Trousseau's signs are positive (but negative in this case). There are no trophic changes in the skin seen in our case, e.g. sparse hair, premature graying, general patchy erythema. Rough, dry, scaly papules, vesicles and bullas may be seen. None of these were mentioned. Deformed and brittle nails were not mentioned. Cataracts, pseudo-tumor cerebri due to increasing CSF pressure were not mentioned.

I have to assume that primary hypo-parathyroidism is not the basic cause of our problem here. I believe the hypo-parathyroidism is secondary. One of the non-parathyroid causes of decreasing calcium is renal insufficiency, but I believe we have enough evidence of normal renal function to skip going into the many facets of this problem. Pancreatic adenomas (multiple endocrine adenomas) can give malabsorption, but there again, we have no evidence of these.

7. Pancreatic insufficiency: This is frequently due to mucoviscoidosis but there is no evidence of this.

So I have left myself with (1) adult celiac disease; (2) regional enteritis; (3) intestinal lymphangiectasis.

Intestinal lymphangiectasis is an idiopathic protein-losing enteropathy characterized by peripheral edema and decreasing albumin secondary to excess enteric loss of plasma proteins. Pathologically there is miscroscopic dilatation of the villi of the jejunum. I left it in to discard it because there is no real evidence from the protocol to support it. Also, in most of these exercises, the discussor must have one esoteric disease, unfamiliar to himself and everybody else to leave a possibility of saying for his ego—"I at least thought of it."

The last two entities are real sticklers, adult celiac disease and regional enteritis. Regional enteritis usually starts in the terminal ileum and is

accompanied by abdominal pain, fever, leukocytosis and elevated sed rates. Usually there is not gross blood in the stools. This is frequent with ulcerative colitis and even though this latter is a very rare cause of malabsorption, I will rule it out on lack of evidence. But I wanted to mention it. In regional enteritis, the process will occasionally involve the urinary tract by direct extension into the bladder from an adherent loop of bowel or by sinus tract from a more distant source. Cystitis and ascending infections are common sequellae. Occasionally the psoas fascia is penetrated, usually on the right side, giving rise to retroperitoneal abscess or fibrotic mass which compresses the ureter and leads to hydronephrosis.

In *New England Journal of Medicine* of March, 1965, a CPC case presented with severe pain over the twelfth right rib for one year. He had diarrhea for only one year and felt full in the upper adbomen after eating. He was thought to have a lesion of the right twelfth rib at another hospital and the rib was removed with no pathologic finding. There was, however, no relief of pain. In this case, there was no real malabsorption and the films of the small bowel were normal, as was a barium enema, except for indentation of the medial aspect of the duodenum. An intravenous pyelogram suggested a mass in the middle portion of the right kidney and slight dilatation of the right ureter. At operation he was found to have far advanced regional enteritis (typical appearance at surgery) and no abnormality was felt or found in the right kidney.

Regional enteritis generally produces a shortened transit time in the small bowel when extensive jejuno-ileitis is present. This can produce a severe malabsorption. However, we again get back to the fever problem. There was no fever here. The disease has accompanying loss of occult blood in the stool, but no loss is noted here.

Finally, adult celiac disease is a chronic, slowly progressive malabsorptive disease of the small bowel due to intolerance or sensitivity to gluten. It is known to exacerbate with periods of stress (possibly pregnancy) as by the way, does ulcerative colitis and regional enteritis. It presents as a chronic diarrhea problem and in our case, she took some 13 years to develop a severe malabsorptive syndrome. While this is possibly regional enteritis, I feel with our given set of signs and symptoms, we must consider our present case as one of adult celiac disease. Gluten is the water insoluble part of flour and the Gliadin fraction of gluten is the offender. Gliadin has high glutamine content, but glutamine has no ill effect on adult celiac disease. Thus, the mechanism of malabsorption by gluten is unknown. There are two theroies: (1) antibody immune response and (2) enzymatic defect in intestinal epithelium.

I suppose I have to guess the nature of the operation. I believe this was a peroral jejunal biopsy, and I predict that the pathologist will find clubbing, thickening and even disappearance of the villi with increase of mitotic figures and eosinphile infiltration into the lamina propria. Histo-chemical and bio-chemical studies show decreasing enzymatic function in the epithelium.

The diagnosis

Dr. McCleery: Thank you for your discussion, Dr. Holmes. Yes, the operation was peroral jejunal biopsy. The first slide (Fig. 2) is a usual normal pattern in a jejunal biopsy. Note the tall delicate villi. The next (Fig. 3) is from this case and we note the flat appearance of the mucosa and loss of villous pattern. This is subtotal villous atrophy compatible with adult celia disease. Since the microscopic changes seen in the slides from this patient have been described in diseases other than adult celiac disease, the proof of the diagnosis lies in the clinical response to a gluten-free diet. On follow up, this patient has gained weight, has been free of diarrhea and has regained her health. She has done very well on this diet and thus our diagnosis is adult celiac disease.

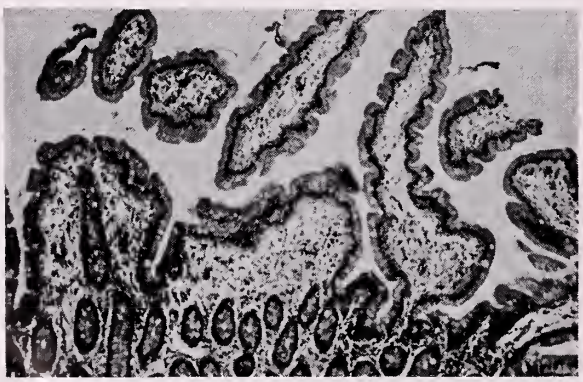


Fig. 2. Photomicrograph of biopsy of normal jejunal mucosa.

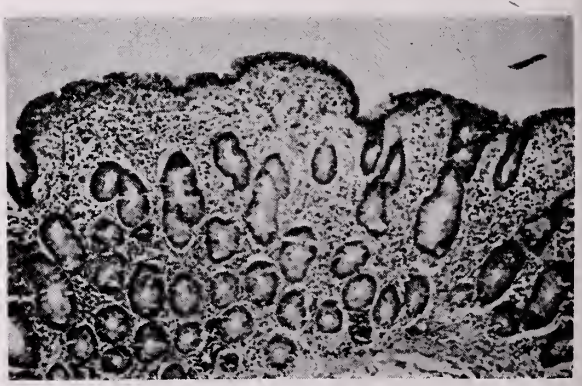


Fig. 3. Photomicrograph of biopsy of jejunal mucosa showing villous atrophy.

Symposium: intra-uterine contraceptive devices

Complications with the IUCD

David M. Anderson, Jr., MD, Laramie

A report of two cases and summary of the literature.

THE INTRAUTERINE CONTRACEPTIVE DEVICE is now widely used as a method of conception control. However, there are problems with its insertion and failure as a contraceptive about which both the physician and patient should be forewarned. Two cases of contraceptive failure are presented with a subsequent summary of the literature concerning those complications which have been currently reported.

CASE REPORTS

Case 1. E. B., a 24-year-old primigravida, had had a No. 3 Birnberg Bow inserted without difficulty in November 1964. She had her LMP on February 10, 1965, had slight bleeding in mid-March, and in early April a pregnancy test was positive. In mid-April, the Bow was removed vaginally as it lay low in the cervix. The patient had a small amount of vaginal bleeding a few days subsequently; thereafter her pregnancy proceeded uneventfully and she spontaneously delivered a normal 7 lb. 4 oz. male infant at term.

Case 2. K. C., a 19-year-old gravida II, para I, had a No. 3 Birnberg Bow inserted at her six weeks' checkup in 1965 following a normal full-term vaginal delivery. Her LMP was in late April 1966, and she had continual irregular bleeding thereafter in spite of which the uterus enlarged normally until the fifth month of her pregnancy. No FHT was ever heard. She spontaneously went into premature labor at the end of the fifth month, delivering a stillborn 15 cm. well-formed male infant, the placenta showing evidence of premature separation, and the Birnberg Bow being spontaneously expelled along with the placenta.

Those intrauterine contraceptive devices most commonly used are the Margulies Spiral or Gynecoil, the Lippes Loop, the Birnberg Bow, and the Hall-Stone or Grafenberg Ring. Complications to be discussed are the following: (1) problems associated with insertion and removal; (2) retention of the device and incidence of contraceptive failure.

Insertion and removal

All of the devices are introduced by being extruded or released from a semirigid tube or inserter. The preferred time of insertion is during the menses or at the postpartum checkup. The size of the device chosen depends upon the parity of the patient and size of the uterus. Although increases in size of the IUCD augment its contraceptive efficiency, they likewise multiply the incidence of significant cramping and bleeding, and the larger bows and steel rings often require dilation of the cervix to facilitate insertion and removal, especially in the nulliparous patient.[7] These symptoms subsequently lead to the request for removal in 5 to 10 per cent of cases.[2] There are also increasing reports of the beaded devices becoming imbedded in the cervix or vagina, and of fragmentation of the devices in-utero during removal.[10]

Because of the high infectious morbidity previously associated with intrauterine contraception, numerous studies have been made of the endometrium with the presently used plastic devices.[13, 16, 23] All reports indicate that there is some endometrial hyperemia, compression, edema and leukocytic infiltration, but all agree that the IUCD does not cause pelvic infection. They may, however, aggravate a pre-existing infection. The existence of pelvic inflammatory disease, fibromyomata, abnormal bleeding, and congenital anomalies constitute contraindications to intrauterine contraception. The patient may be assured that there is no evidence that the IUCD will cause endometrial or cervical cancer.[12, 18]

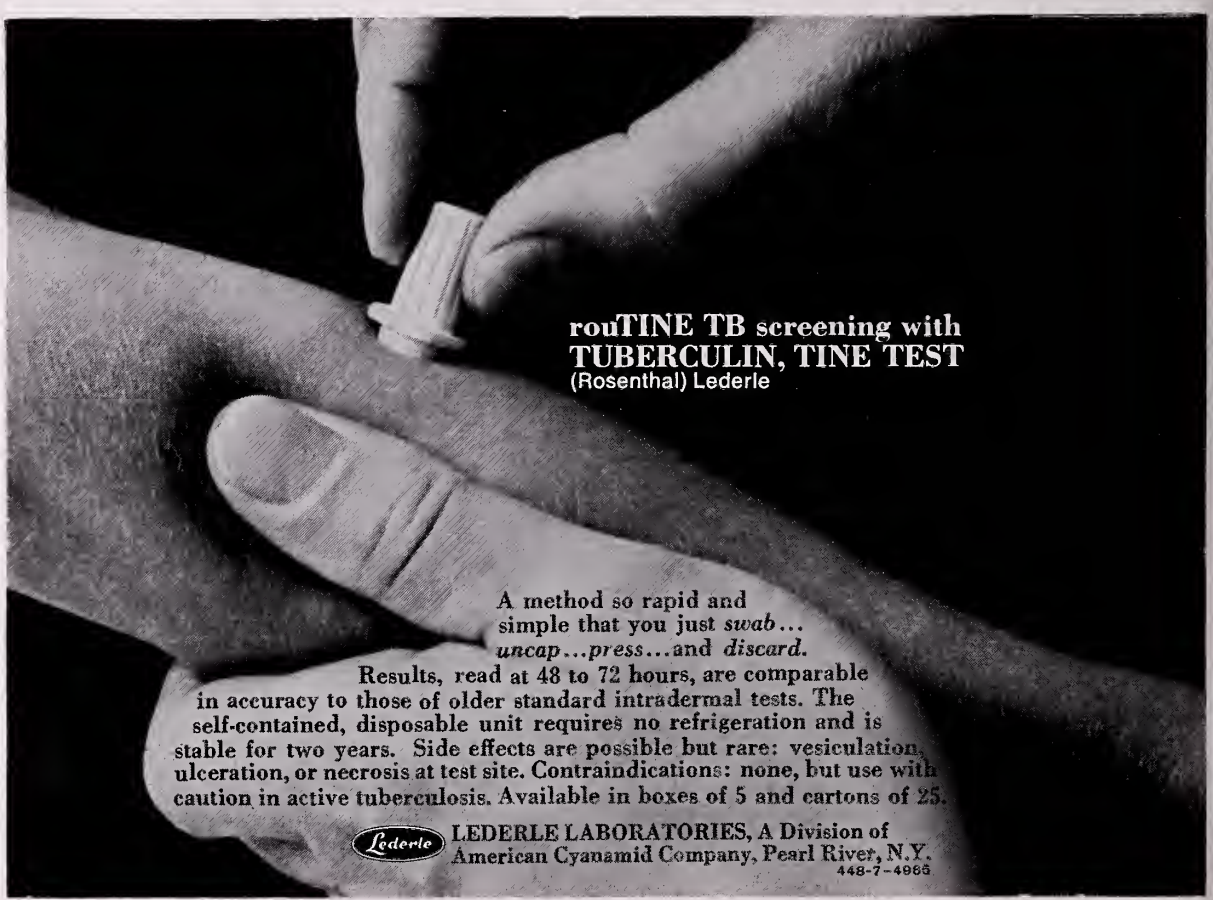
During insertion the more rigid devices are more likely to perforate the uterus.[5] The incidence of perforation of the uterus is approximately 1 in 1,000 for all the devices except the Birnberg Bow, which is 1 in 200.[25]

The Bow has also been more difficult to remove, requiring anesthesia and D & C in many instances.[7] The diagnosis of perforation of the uterus may often be difficult as many patients are asymptomatic or report vague or nonspecific complaints.[17] There have been several reports of bowel strangulation following partial or complete extrusion of the device through the uterine wall.[8, 14] It is therefore recommended that any open ring type device such as the Birnberg Bow or Hall-Stone ring lying within the abdominal cavity be immediately removed by laparotomy; whereas the extrauterine loop or spiral can be safely observed and removed at a later or more convenient time.[25]

Diagnosis of misplacement will be easier if the devices used are provided with nylon tails and if a sound is used or hysterograms are done at the time of x-ray.[9] Perforations may prove fewer by sounding the uterus prior to insertion of the device, by delaying insertion in the postpartum patient until the eighth week, by use of less rigid inserters and plastic materials, and by avoiding expulsion of the device with the inserter held against the uterine wall.[25]

Retention of the device and failure rate

Although the smaller and more pliable devices are easier to insert, they also have the highest incidence of expulsion. Reports show an incidence of expulsion of from 3 to 20 per cent, with the incidence being lowest with the Birnberg Bow and highest with Gynecoil.[11] The patient may have significant bleeding or cramping during spontaneous expulsion, but as it may be altogether unnoticed, various detection schemes such as beaded or nylon tails and implanted magnets have been devised for reassuring the user of its presence. In addition, larger sized spirals, rings, loops and bows are now being used to decrease the incidence of expulsion. Reinsertion of a larger size or a different device will be followed again by expulsion in 50 per cent of patients who will have an increased incidence of significant bleeding and cramping.[18]



Pregnancy occurs with the device in place in 2 to 3 per cent of patients with the highest failure rate observed with the spiral or coil. When pregnancy occurs under these circumstances, the abortion rate is about 35 per cent.[11] Increasing reports indicate the devices are being used to induce abortions, however, and the true rate is uncertain.[1, 11] It should be noted that if pregnancy occurs with the device in-utero, it will lie outside the conceptus and should be removed if it is situated low in the cervical canal or is partially extruded.[4] Otherwise it is left undisturbed, and if pregnancy proceeds, it is usually expelled at the time of delivery as happened in the presently reported case. Ectopic pregnancies with the IUCD have been reported, but the number as yet does not indicate a departure from the usual incidence.[6, 19]

Summary and conclusions

Two cases are presented demonstrating failure of the IUCD as a contraceptive device. Multiple reports in the literature indicate that it is satisfactory in 75 per cent of patients.[3, 14, 15, 18, 21, 22] As contraceptive failure and expulsion is highest with the coil or spiral, and serious complications are highest with the bow and ring, the physician may presently find the loop a compromise if he elects to prescribe the IUCD as a contraceptive.[10,14] In a highly motivated and intelligent patient group, an IUCD has not yet been devised which will offer the patient the degree of contraceptive protection which can be achieved by the oral contraceptive pills, and the significant problems encountered with the device certainly equal or surpass those associated with the "pills." Whereas the IUCD may presently be a very suitable contraceptive for large indigent world population groups, the private physician should choose with discretion when prescribing contraceptives for his individual patient.[14, 21] •

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Effectiveness of the IUCD

E. C. Ridgway, MD, Cody

Technic and conclusions from experience with its use.

My experience with the intrauterine contraceptive device is limited to 87 insertions. All except 13 were the Birnberg Bows. Follow-up was carried out by letter and personal contact, with all except nine patients. The results of this survey are summarized and translated into percentages in Table 1. The period of observation ranged from three to twenty-two months. The results certainly do not constitute satisfactory conception control. One patient suffered a perforation that required surgical removal.

TABLE 1

Satisfied patients	55%
Pregnancies	12%
Removals because of symptoms (bleeding, pain, etc.)	12%
Expulsions	3%

The following points of management and technic are important. (1) A signed and witnessed statement which covers liability of pregnancy, untoward effects, and infrequent but serious complications is always obtained. (2) The method is always discussed with the patient, explaining all possibilities. (3) The insertion is done with sterile technic as an office procedure. No anesthesia or sedation is required. (4) Careful pelvic examination to determine position of uterus and presence of pelvic disease is always performed prior to insertion. (5) The device should be inserted only at the six weeks postpartum check-up or at the end of the menstrual period. Little or no dilatation of the cervix is needed. (6) This method is avoided in the nulliparous patient. (7) Devices with nylon thread or stem for later identification should be used. (8) The approximate depth of endometrial cavity should be measured as a guide to depth of insertion of injector. (9) Injector device should be inserted to full depth and then withdrawn as device is inserted.

From experience, I have derived several conclusions about the use of these contraceptive devices. Birnberg Bows are not satisfactory. Spirals and loops are the preferred devices and the Lippes Loop is my preference at this time. Birth control jelly is a valuable adjunct to the device if the patient can be convinced of its value. ICUD, especially if combined with contraceptive jelly, is a valuable method of contraception control for women who cannot be relied upon to take birth control pills. IUCD is still in the process of development and evaluation. As a method of birth control it is probably here to stay, and future changes will undoubtedly eliminate most of the problems associated with its use. •

Experience with the Saf-T-Coil

Goode R. Cheatham, Jr., MD,
Robert H. Bowden, MD, and
Clarke M. Young, MD, Casper

A combined clinical study by three physicians in private practice.

INTRAUTERINE CONTRACEPTIVE DEVICES are not new. There is an Old Testament reference to placing a stone in a camel, evidently to avoid pregnancy. Early in this century, a guttapercha ring was introduced by Grafenberg, with generally poor results due to adverse endometrial reaction. Similarly, poor results in the 1930's were obtained with "wishbones" and "buttons" made of bakelite, gold, and silver. Stainless steel springs and rings were, and still are, used, notably by the Japanese and by Stone's group in New York. These, of course, necessitate operative insertion and the complications attendant to this type of insertion.

More recently, there have been numerous reports of intrauterine contraceptive devices made with chemically-inert, barium-impregnated plastic. Many of these have a built-in "memory." However, to date, the Saf-T-Coil 33 and Saf-T-Coil 33S have not been reported in the literature. Neither the national distributor nor the manufacturer can supply us with a direct reference to clinical use of this device. It is a double-coiled device with either a beaded or stringed appendage. Each is in a sterile package with its inserter.

We selected this device in May of 1965, primarily because of its ease of insertion. Sounding has been recommended before insertion of any of these devices, and when the coils are withdrawn into the plastic inserter, the entire device serves as a sound. Generally, we have inserted these at the end of a menstrual period. Initially, we used the beaded device. More recently, we have been using the double coil with the nylon thread appendage.

Results

We have inserted these devices for 205 patients; 187 were inserted in 1965 and 1966. The parity ranged from I to VIII. We have not used this device in nulligravidas. Of the 205 patients, 154 fell in the II, III, or IV groups. The median parity was 2.5 (Fig. 1).

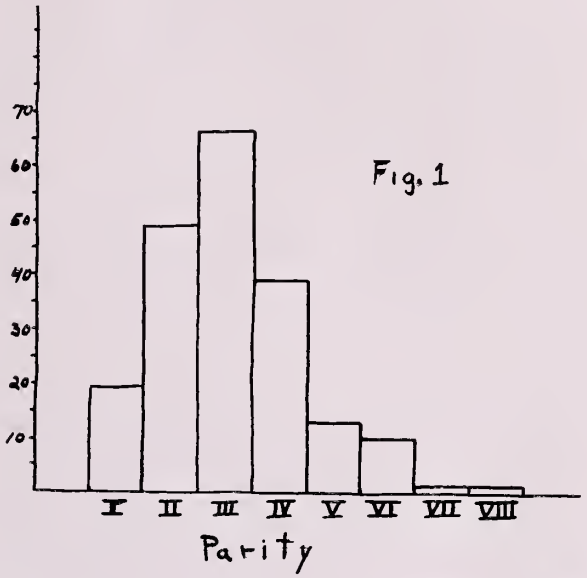

Fig. 1. Graph of parity of 205 patients provided with an intrauterine contraceptive device.

Age at the time of insertion was well distributed. The mean age was 29 years (Fig. 2). The one patient over 50 years of age had delivered her last child at 48 years, and continues to have normal, regular menses at 51.

The patients constitute a good, socioeconomic cross-section of our community, chiefly because there is no clinic for our welfare patients. If any class is not well represented here, it would be the relatively uninformed, lower income group.

Complications

The incidence of significant complications with these initial insertions has been 18 per

cent. Spontaneous rejection, or expulsion, was noted in eight patients, and occurred as long as 18 months after insertion. One other patient reported noting the beaded device removed with a tampon at the end of her period. We interpert this as a spontaneous rejection, also.

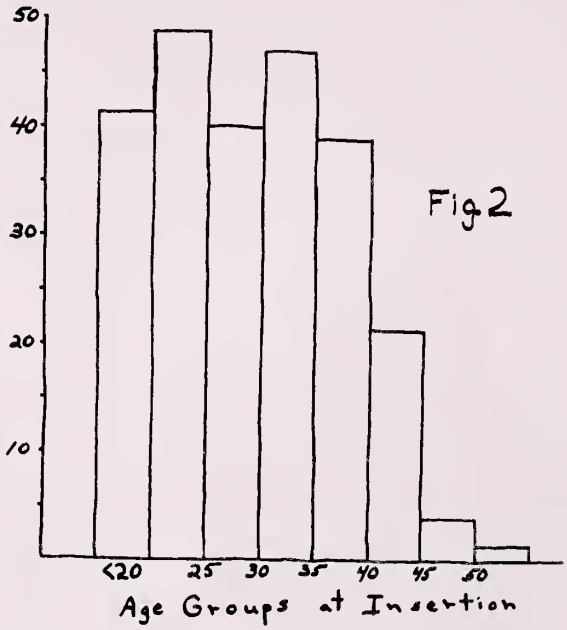

Fig. 2. Graph of age groups of 205 patients with an IUCD.

The device was removed for excessive bleeding in 21 patients who had the beaded device inserted initially, and in only five who had the threaded device inserted initially. Most of the beaded appendages that were removed for excessive bleeding were replaced with the string-appendage device, with a subsequent satisfactory result.

The device was removed and changed for a threaded-appendage device in five patients where male irritation was noted with the beaded devices.

In four instances, the device was removed electively, because of the patient's desire to conceive. In two instances, it was removed for "religious" reasons.

There was one instance of perforation of the uterus, necessitating abdominal removal. The insertion of this device was reported as easy, it was done four and one-half months postpartum, and its abnormal location was detected by A-P and lateral x-ray films.

We have observed neither endometritis nor ectopic pregnancy.

Most importantly, four patients have conceived intrauterine pregnancies. Three of these aborted in the first trimester. Two of these aborting passed the device with the placenta, and the device was located extra-ovular. It was also in an extra-ovular location in the third patient, but had to be removed manually at the time of finger curage, shortly after the aborting placenta was passed. One of the aborting patients had to have a D & C for excessive bleeding four days after the abortion; only decidual tissue was found. The fourth patient is currently 14 weeks pregnant, and has shown absolutely no signs of aborting.

Our figures are not absolutely accurate, but if we assume the device has been in place for only 12 months on the average, we can say we have protected for 2,460 woman-months. With only four pregnancies, this gives a rate of 1.56 pregnancies per 100 woman-years. If the one pregnant patient should deliver, the rate for deliveries is 0.48 deliveries per 100 woman-years.

Conclusions

Our conclusions are based on an admittedly small group of patients. Following 82 per cent of the initial insertions, nothing more was done, and these patients are wearing the device without significant complaint. This figure actually should be corrected to include the women who have no complaint after insertion of the coil with the string appendage, in order to give an accurate picture of the "satisfied customer."

We have had to replace a fair number of the coils with the beaded appendage because of excessive bleeding. We feel the rather wide plastic tape causes bleeding from the cervical canal. For this reason, we feel that the device with the beaded appendage should be avoided. Further, in this regard, the plastic beads have been "overgrown" by cervical tissue in three instances, necessitating either removal or cutting the appendage loose. Another factor with the beaded appendage is the occasional complaint of the sexual partner.

The pregnancy rate in these patients approaches that of the sequential hormones, and if we include its evident effectiveness as an abortifacient, it even surpasses this. If

the effectiveness of the device is measured in terms of babies in the nursery, we think that it is quite effective.

We have not been able to delineate accurately the suitable candidates for this method of contraception. Spontaneous rejection is poorly understood. All four women who conceived were in the 20 to 30-year age group, and presumably more fertile than the older women. We feel the device has merit and continue to insert it.

Summary

We have delineated some of the major characteristics of a heterogeneous group of 205 women seeking contraceptive advice. Each of these women had either the Saf-T-Coil 33 or Saf-T-Coil 33S inserted, and we have reported an 18 per cent incidence of significant complications with this initial insertion.

The estimated pregnancy rate is 1.56 pregnancies per 100 woman-years. If the one patient who is currently pregnant should carry to term, the delivery rate will be 0.48 deliveries per 100 woman-years. The device is evidently a fairly effective abortifacient, as well as a fairly effective contraceptive method for approximately 85 to 90 per cent of the women of this series. •

Sore throats in an Air Force clinic

Clinical evaluation of one thousand cases

Tom M. Johnson, Capt., USAF, MC, and Frederic P. Anderson, Capt., USAF, MC, Warren Air Force Base, Cheyenne

We are all interested in "sore throats." This article points up the high incidence of inaccurate diagnosis and misdirected treatment. The value of throat culture is emphasized.

THERE HAVE BEEN a number of excellent studies suggesting that it is impossible to make a diagnosis of streptococcal pharyngitis on the basis of clinical judgment alone. Siegal, Johnson, and Stollerman[1], along with seven other physicians in a special streptococcus, rheumatic fever clinic studied 2,545 selected children, in the age bracket 3-16, with pharyngitis. They found 47.7 per cent of these harboring beta hemolytic streptococcus on either a first or second culture. The examining physicians predicted that in 55 per cent of these the throat culture would reveal beta hemolytic streptococcus and in the others that the culture would be negative. They stress the point that exudative pharyngitis is frequently associated with viral infections and that enlargement of nodes is not a distinguishing factor between viral and bacterial pharyngitis. Also noted was that temperature greater than 101° and white count greater than 12,000 occurs with equal frequency in both streptococcal and non-streptococcal pharyngitis. Evans and Dick[2] in a study of acute pharyngitis and tonsillitis in University of Wisconsin students confirmed these facts. Also they analyzed a group of diagnostic criteria including exudate, petechiae, edema, lymphadenopathy, and white blood count coming to the following conclusions: "No single finding or constellation of findings included more than 66 per cent of the streptococcal cases except sore throat which, if used as a criteria, would result in treatment of about all cases of pharyngeal tonsillitis with penicillin, 64 per cent of the total unnecessarily. It is absolutely clear that reliable differentiation of patients with strep sore throat from those with non-strep throat depends on a throat culture."

Breese and Disney[3] in a private pediatric practice with an expressed interest in streptococcal diseases, were able to predict correctly strep disease in 70 per cent of 536 patients. This was an average figure with a higher prediction rate in those over 12 years of age and lower in those under 12. Stillerman and Bernstein[4], in an evaluation of 1,141 cases of acute pharyngitis seen in the private practice of one pediatrician, observed that certain groups of clinical signs related to sore throats were associated with a positive culture in more than 70 per cent of streptococcal disease. However, using these strict criteria, they were able to predict correctly only 43 per cent as positive for the streptococci. Schultz[5] in a study of acute respiratory disease in naval recruits who had been subjected to mass penicillin prophylaxis to prevent streptococcus, found that 20 per cent of the patients with adenovirus nasopharyngitis presented with the classical clinical features of streptococcal pharyngitis, including tonsillar exudate.

Because of the variation in the physician's ability to predict streptococcal disease correctly (ranging from 43 to 70 per cent), and because the studies were all done by either single physicians or groups of physicians with special training and interest in streptococcal diseases and performed in specific age group populations, we felt that a study conducted in all age groups by a number of physicians as would obtain in a multispecialty clinic or in general practice would be a valuable addition.

Methods

Our physician population at Warren AFB is twelve (all just out of their respective training programs) with six being general medical officers, two internists, one pediatrician, two surgeons, and one psychiatrist. They see patients either during regular duty hours or as Medical Officer of the Day. All throat cultures, taken for any reason, on patients that were seen by a physician over a three-month period, included a form asking the physician whether or not he felt streptococcal pharyngitis was present. This procedure was continued until 1,000 sore throats as a presenting complaint were collected. These dry swabs were then plated on sheep's blood agar in less than 12 hours and read at 12, 18, and 24 hours. The laboratory then marked the slips as positive or negative, and from this survey the following results were collected.

Results

The base population consists approximately of 3,800 active duty personnel and approximately 11,200 dependents plus an undetermined number of retired persons. In the three months in which the study was in progress a total of 4,870 cultures were taken in the clinic, specifically looking for beta streptococci. Of these 589 or 12.1 per cent were positive, 1,998 cultures were taken in conjunction with the physicians' clinical evaluations; 356 or 18 per cent were positive for beta streptococci. One thousand of these patients complained of a sore throat; in this group there were 222 positive cultures or 22.2 per cent and 778 or 77.8 per cent negative cultures.

Of the 222 positive cultures the physicians predicted correctly in 95 and incorrectly in 127. Of the 778 negative cultures the physicians predicted corrected in 638 and incorrectly in 140. Therefore, if a patient came to the hospital with a sore throat due to a streptococcal infection, the correct diagnosis would be made 43 per cent of the time. If his sore throat was not due to a streptococcal infection, the correct diagnosis would be made 82 per cent of the time. Looking at the same figures in a slightly different manner, if a physician predicted the finding of beta streptococci, on culture he would be correct 40.5 per cent of the time. If he predicted the absence of beta streptococci, he would be correct 83.5 per cent of the time.

Of the 1,000 patients with sore throats, 647 were children of 13 years and under; 353 were adults. Correct predictions of streptococcal disease was made in 42 per cent of the children and 45.5 per cent of the adults.

There were 998 patients who presented with complaints other than of a sore throat. Of these, 134, or 13 per cent, proved to have a throat culture positive for beta streptococci. The physicians predicted correctly in only 15 of this group, or 11.3 per cent.

As an exercise in self-abasement, the corpsmen were asked to evaluate 100 sore throats. In patients with positive cultures the corpsmen predicted correctly in 61.5 per cent;

in those with negative cultures they predicted correctly in 65.5 per cent. Their judgment was incorrect in 34.5 per cent while that of the physicians was incorrect in 18 per cent.

Discussion

The conclusions from these data we believe are self-evident, namely, that no one can make an accurate prediction on clinical grounds of the presence or absence of streptococci in pharyngitis. We also believe that the overall judgment rate of most physicians would be around or slightly better than the 40.4 per cent we arrived at. We realize that far superior figures have been recorded, and indeed should be recorded, by physicians interested in streptococcus or dealing with only one age group population. We would also like to stress the poor results obtained in adults, by most investigators, and Breese and Disney[3] in particular, who report a 90 per cent correct prediction rate in children over 12 years of age, and consider an adult strep throat more classic in its signs and symptoms than a pediatric one.

It is obvious that the only satisfactory solution to this problem is to culture the throat, optimally at 24-72 hours after the onset of the illness,[3] and then, in general, to await the results of the culture before instituting antibiotic therapy. This is not to say that one should withhold treatment from all those acutely ill, for clinical judgment will occasionally dictate starting therapy prior to the return of the culture. Here one may be reassured by the eventual results of the culture in conjunction with the presence or absence of the therapeutic response.

We feel that throat cultures should be obtained in all respiratory diseaes even in the absence of clinical pharyngitis. This is borne out in the figures showing the recovery rate of 13 per cent in this group with the poor prediction rate by the physicians of 11.2 per cent. Assignment of etiologic significance to these positive streptococci isolations is, of course, controversial; however, in our facility all positive cultures are treated with antibiotics.

The questions would arise here concerning the accuracy of culture. First, how often is the culture falsely negative? In a study by Stillerman and Bernstein[4], in two cultures taken at the same visit a disagreement was found in 1.3 per cent of the 152 cases studied. In cultures taken at two successive visits, disagreement was found in 6.6 per cent. Therefore, they consider culture error to be approximately 3 per cent, not considering asymptomatic carriers. The low incidence of culture error is borne out in a study done by Margeleth, et al.,[6] in the Navy. Over a period of four and a half years in a pediatric age group, they did 20,000 cultures with a reculture rate of 5 per cent. Even with low figure of reculturing they documented only one case of rheumatic fever in this period of time and in this number of cultures. Although our results have not been calculated this way, we have had the same experience and degree of confidence, indicating that a second culture is occasionally warranted depending upon the clinical situation.

Secondly, to what extent does delay in plating out a dry throat culture sent through the mail affect the yield of streptococci? Breese[7] has found that mailing dry swabs through the mail with delayed plating on rabbit blood agar results in almost 100 per cent recovery up to the first week and greater than 90 per cent recovery up to one month.

Patient education is important in throat culture programs. We feel because of the stress on culturing in the Armed Services that many people are requesting cultures rather than demanding to see the physician at the first sign of a sore throat or minor upper respiratory infection. In these cases we have found that through this education the patients are more inclined to be content with symptomatic remedies for non-streptococcal infections.

By culturing one demonstrates specific etiology of the symptoms, a primary goal in medicine. One also avoids over-treatment and therefore reduces the cost to the patient and lessens the chance for an untoward antibiotic reaction. Above all other benefits of culturing, however, is the chance it gives the physician to locate a source of individual streptococcal disease. A family can then be cultured and appropriate therapy instituted. This is the only practical means of preventing the dread sequelae of streptococcal disease—acute rheumatic fever and glomerulonephritis.

Summary

The results of clinical evaluation by twelve Air Force physicians of one thousand patients complaining of a sore throat were compared with the results of the throat culture. It was found that the physician was able to pedict the presence of streptococci correctly in only 43 per cent. It is concluded that throat cultures are the only reliable method of diagnosing streptococcal pharyngitis. •

ACKNOWLEDGMENT

The opinions expressed herein are those of the authors and do not necessarily reflect the view of the United States Air Force or the Department of Defense.

We would like to express our appreciation to all of the staff physicians of the 809th Medical Group for their patient cooperation in this study, especially to Colonel Francis P. Fardy for his enthusiastic support and interest, and to Mrs. Mary Lou Bartlett for secretarial assistance.

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Discussion by Donald W. Hunton, MD, Cheyenne

This is an interesting study and it impresses me that we have no alternative except to acknowledge our clinical inadequacy in this area and do throat cultures on every patient with an upper respiratory infection. This is something I do not currently do. There are a number of other comments appropriate to this study, which deserve airing.

The first is to congratulate Dr. Johnston and Dr. Anderson on a prospective rather than a retrospective study. This is done too infrequently. To plan a study, using the basic principles of answering a specific question by formulating an experimental design, incorporating adequate controls, recognizing and eliminating prejudice gives results of a superior nature.

The second is the study which was designed to confirm or not confirm someone else's work. This is less exciting than original exploration and therefore a much neglected area.

The third is the publication of negative results, a vital professional duty which is too often swept under the rug.

I have to take issue with your conclusion that no one can make an accurate prediction on unequal grounds. You might conclude from your own study only that no one did do so. You deliberately designed your study to eliminate specific interest, and deliberately left in physicians who may have had a capricious outlook on the clinical diagnosis of streptococcal disease, which disallows your positive conclusion.

There is another variable which might serve as the focal point of another study. Doctors Breese and Disney live in Rochester, New York, which is another high endemic streptococcal area. I have a recollection that at least part of their cases may have been compiled during a strep epidemic. I also recall an epidemic of streptococcal disease at Warren AFB in 1956, wherein we had 480 patients in a 150-bed hospital. In these circumstances, our predictions were estimable in the range of 95 per cent. Therefore, I suspect it possible that the accuracy rate depends upon the incidence rates and this should be one of our considerations.

Finally, I was interested in several investigators having apparently omitted the history of the disease. I suspect that in an intensive effort to arrive at accurate clinical data, one should consider the abruptness of onset and immediate toxicity as being useful guides.

Methoxyflurane, nitrous oxide, oxygen analgesia for delivery

Thomas T. McGranahan, MD, Laramie

Intermittent obstetrical analgesia with a new agent.

In July, 1963, we were presented a new challenge, that of providing anesthesia for vaginal delivery in a hospital where almost no trained anesthesia service had been available. In the previous year only 18 of 557 vaginal deliveries had been attended by a trained or experienced anesthetist; nine other deliveries were performed under regional anesthesia given by the obstetrician. Realizing that our coverage for anesthesia would be less than full-time and often rushed by other commitments, and knowing the nature of obstetrics, we desired a technic which could be instituted rapidly and without significant preparation. An inhalation technic seemed best. Of importance then was the selection of an agent-technic combination that would provide maximum comfort for the mother and maximum safety for both mother and infant. In addition, the obstetricians had to be convinced of the safety of the method (obstetricians "know" that inhalation anesthesia is "bad" for babies), it had to be non-flammable because of the lack of anti-ignition precautions in the delivery suite, and it had to be an easy method to teach others.

The safest possible inhalation technic for obstetrics would seem to be some form of analgesia, whereby the patient remains conscious and cooperative throughout the delivery. If the mother is awake, the infant should not receive depressing quantities of anesthetic agent. If the mother is awake, her chances of aspirating are decreased. In addition, a large number of young women, influenced by the writing of Dr. Grantly Dick Read, actually want to be able to share in the sights, sounds, and joys of the birth of their children.

In February, 1963, Shnider, et al.,[1] described continuous obstetrical analgesia with both cyclopropane (3-5 per cent) and nitrous oxide (40 per cent). Both methods were shown to be safe and effective. The cyclopropane technic would not meet our requirements since the concentrations required are both flammable and explosive. In our hospital, the previous experience of the obstetricians had been largely with intermittent self-administered trichlorethylene. Therefore, we felt that an intermittent technic would be more easily accepted. However, the intermittent administration of nitrous oxide, often referred to as "whiffs," may be ineffective unless uterine contractions are well anticipated so that an adequate quantity of gas may be received by the mother before breath-holding and bearing down begin. We hoped that if a potent, highly analgesic agent which did not dissipate rapidly could be added to the familiar "whiff" technic of nitrous oxide administration, we might have a method which would meet all our criteria.

Methoxyflurane (Penthrane®) has been reported to be an excellent obstetrical anesthetic.[2, 3, 4] Its potency and analgesia are well known, and it is non-flammable. Equally important, when used intermittently in a Cyprane inhaler its effect has been noted to linger between contractions.[4] Thereafter, we experimented with combinations of methoxyflurane, nitrous oxide, and oxygen.

Technic

From mid-1963 until early 1965 the following technic evolved. When time permitted, the patients were visited in the labor room, examined, and the forthcoming events were described to them. They were lightly premedicated at the discretion of the obstetrician. In late first stage labor or in second stage labor the patients were moved into the delivery room. There the pulse and blood

pressure were monitored routinely. Anesthesia equipment consisted of a two gas anesthesia apparatus with a semi-closed circle, soda lime cannister, and either an in-line No. 8 Heidbrink vaporizer or an out-of-line No. 10 Heidbrink vaporizer. The vaporizer chosen was charged with methoxyflurane. The soda lime cannister was such that it could be excluded from the breathing circuit had the patient received any trichlorethylene prior to the arrival of the anesthesiologist.

To produce analgesia, the flowmeters were set for two liters nitrous oxide and two liters oxygen, and left there. The No. 8 vaporizer was opened from number 1 to a maximum of number 3. The control knob of the No. 10 vaporizer was marked with an engraved arrow. Noting the position of the arrow when the vaporizer was closed, care was taken never to open the control knob more than one-quarter turn. These settings were varied according to the patient's requirements, and we estimate that the highest concentrations thus delivered would be 0.3 to 0.4 per cent. A No. 100 Heidbrink inhaler casting was used to connect the mask to the inhaler tubing, and this valve was closed to keep the mixture in the breathing circuit whenever it was not being administered to the patient, and opened with each contraction.

Patients were asked to tell us when they felt the earliest sign of a contraction. The mask was then applied, the valve on the inhaler casting opened, and the patient was instructed to take two or three moderately deep breaths and then hold her breath on inspiration and bear down. This was repeated as long as the contraction lasted. With increasing experience it was often possible to anticipate the onset of uterine contractions from patient movement, changes in respiration, etc., before the patient gave any verbal indications. Conversation was carried on with the patient almost constantly. Instruction, encouragement, and exhortation on the part of the anesthetist was most important. Questions were asked often enough to ascertain the patient's mental state and degree of comfort. The course thus steered was between discomfort and delerium. As would be expected, when individual contractions were long in duration, or very close together, or when the second stage was long and thus the exposure to agents was increased, progressively less methoxyflurane was required to maintain adequate analgesia. With the delivery of the head, methoxyflurane was discontinued, and the patient was asked to pant and not bear down, while the obstetrician cleared the baby's airway. If the methoxyflurane was not discontinued at this point and the breathing circuit was not emptied of the previous mixture as much as possible, the mother would deepen her level through hyperventilation and become at least amnesic for the terminal events of the second stage. On a signal from the obstetrician the patient was again asked to bear down and the delivery completed. Anesthetic gases were then discontinued. The episiotomy was repaired under local infiltration or pudendal block anesthesia. A few breaths of the analgesic mixture were given with the delivery of the placenta if the mother found this maneuver uncomfortable due to fundal pressure. The same was done on occasion if there was some discomfort with the episiotomy repair in spite of the regional anesthesia.

Method of study

By early 1965 we felt that we had perfected what was, in our clinical opinion, a safe, effective and acceptable method for patient, infant, obstetrician, and anesthesiologist alike. We then determined that for a period of one year we would offer this technic to every obstetrical patient in whom it was applicable. Records were kept for age, parity (Table 1), premedication (Table 2), length of anesthetic administration (from first mask application to delivery, not actual minutes of inhalation), regional supplements to analgesia, any additional obstetrical procedures, incidence of nausea and vomiting, and any other pertinent data concerning the delivery (i.e., abnormal presentations, cord around neck, etc.). All patients were visited daily post-partum, and at the end of twenty-four hours they were asked to report any nausea or vomiting. Retching and vomiting in the delivery room was recorded. Infants were graded by the Apgar scoring system at one minute and again at five minutes, if the original score was six or below. Other data was collected as needed.

TABLE 1
Distribution of Parity

Para	*No. of pts.*	*%*
0	62	43%
1	39	27%
2	25	17%
3	11	8%
4+	7	5%
Total	144	100%

TABLE 2
Summary of Premedication

Drugs and dosage	*Pts.*
Meperidine 50 mg-hydroxyzine 50 mg	69
Meperidine 75 mg-hydroxyzine 50 mg	19
No premedication	17
Meperidine 50 mg	11
Meperidine 75 mg-hydroxyzine 25 mg	10
Hydroxyzine 50 mg	4
Meperidine 50 mg.-promethazine 50 mg	3
Meperidine 100 mg	2
Meperidine 75 mg	2
Meperidine 50 mg-hydroxyzine 25 mg	2
Meperidine 50 mg-promethazine 25 mg	1
Meperidine 50 mg-hydroxyzine 75 mg	1
Meperidine 50 mg-propiomazine 20 mg	1
Meperidine 25 mg	1
Pentobarbital 100 mg-propiomazine 20 mg	1
Total	144

Results

Maternal: From April 11, 1965 through April 10, 1966 we were called upon to assist with deliveries in 152 cases. The patients ranged in age from 17 to 41. Three women, following explanation, chose another technic (1 spinal, 2 natural childbirth). We arrived too late to be of significant assistance to one other. Three patients were known to carry dead infants, and one was to deliver an illegitimate child whom she did not wish to keep. We felt that memory was not desirable in these patients, and there being no contraindications, light general anesthesia was performed. These eight patients were then dropped from the study.

The remaining 144 patients were evaluated on the following basis. Those who, though accepting the idea of obstetrical analgesia, were unable to cooperate or for some other reason were taken to operative levels of anesthesia were Group O. Those who, before leaving the delivery room, professed good analgesia, but who had poor memory or frank amnesia for the expulsion of the infant were Group 1+. Those who, before leaving the delivery room, professed good analgesia and good memory for the expulsion of the infant were Group 2+.

Of the 144 parturient females who entered the delivery room prepared for obstetrical analgesia, two were unable to cooperate, and because of frank panic had to be taken to deeper levels of anesthesia. One patient had a very difficult breech presentation and required deeper anesthesia for delivery. These three patients were the only ones in Group O. They made up 2 per cent of the original 144, and while they were followed through their postpartum course, they are not included in the study to any further extent.

The remaining 141 patients (98 per cent) successfully completed second stage labor with obstetrical analgesia. Nineteen (13 per cent) were classed as Group 1+, and 122 (85 per cent) were classed as Group 2+. The length of time from first mask application to the end of the second stage ranged from 3 minutes to 85 minutes, with an average time of 19 minutes.

There was no maternal mortality, no aspiration, and no cardiovascular or obstetrical problem related to anesthesia. Supplements to analgesia were local infiltration of the perineum in 63 patients, and pudendal block in 68 patients. In addition, seven patients required general anesthesia for manual extraction of the placenta or to supplement ineffective perineal anesthesia.

In the Group 1+ and 2+ patients the following additional procedures were performed: episiotomy and repair, 129; repair of laceration, 3; mid-forceps rotation with or without low forceps delivery, 10; elective low forceps delivery, 10; breech extraction (one with Piper forceps), 4; cervical inspection, 1; and manual extraction of the placenta, 6. These add up to a total greater than the total number of patients since some patients had more than one procedure; however, the 10 mid-forcep and 10 low-forcep applications represent 20 individuals.

Five patients retched or vomited on the delivery table. Three of these had been vomiting during labor. One of the five vomited immediately following injection of intravenous meperidine. Of these five, three continued to vomit up to one hour post-partum.

One patient complained of only nausea in the 24-hour period post-partum. Five patients had one emesis each in the 24 hours following delivery. One of these vomited immediately upon receiving intravenous ergotrate. Data are lacking on two patients. On the basis of available data, the gross per cent of those suffering nausea or vomiting during delivery and within 24 hours after delivery is 7.9 per cent (11 of 139 patients). If the patients with prior vomiting, and the patients who received intravenous meperidine and ergotrate are eliminated, the per cent drops to 4.3 per cent (6 patients).

Infant: There was no infant morbidity or mortality related to anesthesia. Table 3 shows the distribution of Apgar scores at one minute. Table 4 breaks down the individual scores 6 and below and shows the five minute score, the reason given for the low score, and, in the one case of infant death, the autopsy findings.

TABLE 3
Apgar Scores at One Minute

Score	*Pts.*
9–10	109
8	23
7	2
6	1
5	3
4	1
1	2
	Total 141

TABLE 4
Analysis of Low Apgar Scores

Apar 1 min.	*Apgar 5 min.*	*Reason for low score*	*Autopsy results*
6	9	cord tightly around neck	
5	9	difficult breech	
5	8	difficult mid-forcep rotation	
5	8	prematurity	
4	5	prematurity	primary atelectasis
1	8	difficult forceps	
1	8	difficult mid-forceps rotation	

Discussion

The disadvantages of intermittent obstetrical analgesia, too-little-too-late, and excitement from sudden high concentrations of rapidly acting agents, have been well pointed out by Shnider.[1] We feel, however, that the particular properties of methoxyflurane, and the changes in the pulmonary function of the parturient female combine to make an intermittent technic feasible. The chronic hyperventilation of pregnancy, enhanced by the pain and effort of labor, markedly hastens the onset of action of a highly soluble anesthetic agent.[5] Methoxyflurane, with a blood solubility coefficient of 13[6], is such a drug. The decrease in the functional residual capacity of the lungs (FRC) during pregnany allows for a more rapid increase in alveolar concentrations since there is less "diluent" in the lung. This decrease also hastens induction, but this effect is most noted with less soluble agents.[5] In this technic, the companion gas is nitrous oxide which has a blood solubility coefficient of 0.468[7]. In addition, it has been suggested on the basis of water and blood solubility coefficients of methoxyflurane, that an anemic patient would be more easily anesthetized with this agent. The patient in labor commonly has a hypervolemia with a decreased hematocrit. These three effects, then, the first two probably being the most important, produce a rapid onset of action when methoxyflurane and nitrous oxide are administered at the beginning of a contraction. The high blood solubility of methoxyflurane, which largely accounts for a sometimes bothersome long recovery from general anesthesia, also accounts for its effect lingering between contractions, so that patients are nicely sedated then, and with each succeeding inhalation they obtain even greater analgesia. Since the technic is intermittent, and there is some recovery between contractions, but with the retention of some analgesia, we did not encounter a problem with excitement which might be noted if a poorly analgesic agent was administered. Use of methoxyflurane and nitrous oxide by this method does, however, require careful observation and constant contact with the patient to avoid amnesia at the time of expulsion of the infant when ventilation is greatest. When amnesia did occur, patients remained cooperative and would respond to commands.

Strictly speaking, the patients for this study were unselected. While it is true that the anesthesia service did not select the patients, they were in fact highly selected. In our hospital, anesthesia service for the obstet-

rical patient is not routine, and must be requested by the obstetrician. During the period of this study there were 519 vaginal deliveries in the hospital. Thirty-one patients received general anesthesia from a nurse. Fifteen patients received regional anesthesia from an obstetrician, and we saw 152 patients. The remaining 321 deliveries during the study period were performed without anesthesia personnel, primarily with self-administered trichlorethylene and local infiltration. Anesthesia service is requested most often for patients of low parity, where the most discomfort is expected, and for patients in whom problems, either maternal or fetal (such as abnormal presentations, uterine inertia, previous history of hemorrhage, borderline pelvimetry, fetal distress, prematurity, etc.) are apparent or likely. We feel that the efficacy of this technic is more apparent when one considers that this is the population in which it was employed. In all fairness, however, it should be noted that these patients were very well prepared for labor and delivery by their physicians before entering the hospital.

It is also important to point out that of the 144 patients who originally accepted the idea of intermittent obstetrical analgesia, eleven (7.7 per cent) received a general anesthetic before leaving the delivery room. Thus a decision to use a "safe" analgesic technic does not relieve the anesthesiologist of the responsibility for knowing when and what amount the patient ate last, and for having suction, endotracheal equipment, and muscle relaxants at hand.

Summary

A technic of intermittent obstetrical analgesia using methoxyflurane, nitrous oxide, and oxygen is described. One year's experience with its use in 144 patients is outlined. The technic was effective in 141 (98 per cent) patients. There was a relatively low incidence of vomiting and no maternal or fetal complications related to analgesia. Eleven of the patients required general anesthesia for either delivery or post-partum problems. The efficacy of methoxyflurane-nitrous oxide as an intermittent analgesic is probably related to changes in maternal pulmonary function, and to the blood solubility of the agents.

Addendum

Since completion of this study, we have performed this technic on a number of patients using an apparatus more suited to intermittent administration, a McKesson Narmatic (No. 1362) with an ether vaporizer. The demand flow, and the non-rebreathing circuit are desirable features. To obtain analgesia, the oxygen is set at 50 per cent (the other 50 per cent being nitrous oxide), and the ether vaporizer charged with methoxyflurane opened no higher than the 2 calibration. •

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Manometry of the common bile duct

Practical values with special reference to diagnosis of ampullary stenosis

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This report illustrates areas of concern in biliary tract surgery in which the measuresment of intraductal pressures is helpful.

As a consequence of the increasing age of our population, the frequency of complicated bile duct disease will certainly rise. Cholangiography has been of inestimable help in both diagnosis and treatment of difficult biliary tract problems. The addition of manometry to the armamentarian of the surgeon will be of further value.

In 1901 Opie[1] proposed that an obstruction situated in the terminus of the ampulla formed by a confluence of the biliary and pancreatic ducts would permit the flow of bile into the pancreas with resultant pancreatitis. This "common channel" theory provoked a controversy that is still much alive. It also excited a study of pressure relationships between the two ductal systems that continues to this day.

In 1947, Mallet-Guy,[2] of France, described radiomanometry. He felt that operative cholangiography could not be properly evaluated without fluoroscopy. Since fluoroscopy could not be conducted in the operating room, he obtained manometric recordings of intraductal pressures and suggested that the curves of biliary pressure changes could be substituted as the equivalent of fluoroscopic visualization. The hyperpressure tests conducted by Mallet-Guy[3] led him to establish a "normal" range of biliary tract pressure between 8-14 cm. of water.

In 1960, Goinard and Pelissier,[4] of Algiers, reported their experiences in the use of pharmacodynamic radiomanometry and "total sphincteroplasty" without drainage of the common duct in 100 patients with biliary tract disease. To induce active choleresis, 100 mg. of sodium dehydrocholate is injected intravenously 10 minutes before measurement of the intraductal pressure. They found the normal flow pressure to vary between 10-12 cm. and felt that a pressure of 16 cm. or over indicated some hindrance to bile flow through the sphincter of Oddi. A cross-check is made by introducing an ampule of amyl nitrite into the anesthetic circuit. This consistently causes any pre-existing spontaneous or provoked spasm to subside in 20 to 30 seconds.

In 1963, Scott[5] and others from the Mayo Clinic reported on the resistance to flow through the common ducts of 24 patients with T-tube drainage tested on the tenth postoperative day. Relationships between applied pressures and flow rates were governed by resistance to the flow of saline. These studies indicated a "basal" intraductal pressure range of 3.9 to 16.3 cm. with an "average" of 9.6 cm. of saline. The studies concerning the resistance to the flow of saline through the biliary tract indicated that when the intraductal pressure was less than 7 cm., there occurred an outflow of bile but at pressures greater than 8 cm., saline flowed into the common duct. They concluded that in all but four patients, the choledochal sphincter was closed at applied pressures less than the initial perfusion pressure. In addition, they reported a large resistance to flow at pressures up to 2-4 cm. above initial perfusion pressure but at this pressure, resistance decreased suddenly with corresponding marked increases in flow rates.

Method of obtaining manometric levels

The intubated common bile duct, via T-tube or catheter, indwelling polyethylene tube or needle, is connected to a manometer held in the mid-coronal plane. Small amounts of water or saline (2-5 ccs.) are instilled and manometric readings observed. The quantity of fluid instilled will depend on the size of the duct and the degree of filling at the time of study. A rapid fall in the level to a value near 10 cm. is considered "normal." A slow fall to this or lower pressures is regarded with suspicion. A slow fall to a value of 15 cm. or higher is considered "abnormal."

There are both advantages and limitations in the use of this technic:

1. The method is "simplicity itself" and lends itself not only to easy operative use but also to quick and easy use in the postoperative phase. Because of its ease of use, one real value rests in the fact that multiple serial readings can be obtained without difficulty, thus aiding in evaluating postoperative changes within the duct.

2. One must be alert to the fact that "abnormal" values may be elicited by spasm of the sphincter of Oddi, by a stone momentarily blocking the outflow of bile, by artificial kinking of the mechanical apparatus, or by "sludge" accumulating about the T-tube or ampulla.

3. Cholangiography remains a proven and vital adjunct of biliary tract surgery. Manometry will, if used consistently, prove to be of ancillary help in interpreting cholangiograms. The cholangiograms will, in turn, aid in explaining the manometric values.

4. Repeated use and the experience gained is essential to develop confidence in the maneuver and familiarity with the defects in the method.

Case material

The experiences gained in the treatment of 65 patients who underwent exploration of the common bile duct for benign disease form the basis for this report. Excluded are malignancies and known common duct strictures. Included are those patients that posed the question of the existence of common duct stones, stenosis of the ampulla of Vater, or both.

Of these patients, 28 were either jaundiced at the time of operation or had recently been jaundiced. Of this group, 22 had common bile duct stones, 6 did not. Some 37 patients had no history of jaundice. Of these, 20 had common bile duct stones and in 17 cases, no stones were found.

The operative procedures carried out were varied (Table 1). Although the most commonly performed procedure was that of cholecystectomy and exploration of the common bile duct, it must be recognized that this procedure includes most of those searches that proved friutless for common duct stone. In addition, it may be fairly stated that although exploration of the common duct in association with duodenotomy and sphincteroplasty was carried out only nine times, the other procedures of choledochoduodenostomy and cholecystogastrostomy were done to bypass ampullary stenosis. Thus, the incidence of ampullary stenosis was significant.

TABLE 1

65 OPERATIONS FOR COMMON DUCT DISEASE

CHOLECYSTECTOMY and CHOLEDOCHOTOMY	45
CHOLEDOCHOTOMY and DUODENOSTOMY	9
CHOLEDOCHOTOMY	5
CHOLEDOCHODUODENOSTOMY	5
CHOLECYSTOGASTROSTOMY	1

Manometry in determining when to remove a T-tube

Manometric studies are of aid in several problem areas of surgery of the biliary tract. The proper time to remove a T-tube, often an empiric decision, can be determined by measurement.

CASE REPORT

Case 1: J. B., a 35-year-old white male, was operated because of extrahepatic obstructive jaundice. At operation, a "woody-hard" gallbladder containing a single large stone was removed. The common duct was free of stone or stenosis and the obstruction was found to be due to an inflammatory mechanical "kinking" of the common duct. Bakes dilators through 8 mm. were passed through the ampulla with ease. A T-tube was inserted and manometric and cholangiographic studies were carried out and nothing abnormal noted. During his hospital stay, the ductal pressures ranged from

15-20 cm. of water. At the fourth postoperative week, the manometric readings were at "normal." (A fast drop to 10 cm.) A repeat T-tube cholangiogram was negative and the tube removed during the fifth postoperative week.

Comment: In the process of determining the presence or absence of stenosis of the ampulla, the time honored passage of Bakes dilators occupies a hallowed place. Most surgeons feel that if a 3 mm. dilator passes with ease, there is no stenosis, but that if such does not occur, there is good reason to expect stenosis. All surgeons recognize the danger of false passages of the probes. It has occurred that we may not appreciate how much edema and inflammation may result from this "dilatation." Thus may result the actual cause of an obstructive process in the postoperative period. Repeated manometrics of the common duct tract will be of real help in following the degree of healing to the status of a "normal" ampulla. Thus, when the pressure drops to a limit of "normal" values, the occluded T-tube is tolerated without symptoms, a postoperative cholangiogram is negative, it may be assumed that this indeed is the correct time to remove the tube.

Manometry in distal common duct stenosis

One of the most difficult problems in the care of patients with biliary tract disease is the diagnosis of distal common duct stenosis. As one might surmise, speculation is legion concerning cause of it (or its symptoms: "ampullary stenosis," "stenosis of the sphincter of Oddi," "Fibrotic Odditis," etc.) and the role of this abnormality in bile tract disease. Stones, "sludge," trauma, pancreatitis, duodenitis, muscular hypertrophy, cholesterolosis, spasm, have all been implicated.

The cause of distal common duct stenosis in man cannot be proven with assurance. Doubilet and Mulholland[6] consider chronic spasm of the sphincter "a sealing mechanism" to be responsible for most cases of pancreatitis and fibrosis of the sphincter, second in frequency only to ampullary injury caused by stone, inflammation and trauma. In animals, stenosing choledochitis has been produced several times by different groups (Wolfer,[7] Hjorth,[8] Bisgard and Baker[9]) by employing pancreatic juice activated by bile. But what evidence is there that distal common duct stenosis is a pathological entity in man?

In 1960 Paolino and Cavalcanti[10] compared 23 biopsy specimens removed at the time of sphincteroplasty with 22 specimens removed at autopsy from patients with no history or evidence of biliary tract disease. Either muscular hypertrophy, fibrosis or inflammatory infiltration was noted in all of the sphincterotomy biopsies, but no pathologic lesion was found in the autopsy specimens. Mahorner and Browne[11] found the obstruction to be in the papilla or meatus rather than in the sphincter in 29 patients having sphincterotomy. Cattell, Colcock and Pollack[12] felt that fibrotic stenosis of the sphincter can occur without stones or previous trauma, since reported biopsies (12) showed "chronic inflammation and fibrosis" as compared to normal sphincters of Oddi removed at autopsy. In a clinicopathologic review of 50 cases, Grace[13] added to the evidence that scarring produces stenosis as a final result of inflammatory reaction. Very recently, Acosta and Nardi[14] studied some 61 patients with benign inflammatory stenosis of the lower end of the common duct and concluded that chronic lesions were the result of repeated acute inflammatory episodes.

In distal common duct stenosis there are three problems that deserve comment:

1. DETECTION OF INTRADUCTAL DISEASE AT TIME OF CHOLECYSTECTOMY.

In many ways, this problem is the most difficult to solve since the answer depends on two prime factors—the indications for exploration of the common duct and the role of cholangiography as a routine technic. Behind the positive indications for ductal exploration lies the fear of injury to the duct, and a valid fear this is, since operative trauma has been reported as the cause of common duct stricture by Cole[15] in 72 per cent of his series, and by Cattell[16] and Lahey[17] in about 30 per cent of their cases. The per cent of cases subjected to common duct exploration varies so widely that this in itself acknowledges the fact that, in practice, there is no general agreement as to indications for exploration. However, Kirtley[18] states that there are three *absolute* indications for exploration of the common duct at the time of cholecystectomy: (1) an abnormally dilated duct (10 mm. or larger), (2) palpable stone or stones

in the duct, and (3) a definite history or presence of jaundice of the obstructive type.

The role of operative cholangiography to detect common duct stone is similarly subject to wide variations in use. It is clear, however, that frequent use and resultant experience yields dividends in the avoidance of error, the saving of time, and the increased accuracy of the method. Hicken and McAllister[19] reported an incidence of "overlooked" stones in 19 per cent of 486 choledochotomies without operative cholangiograms as compared to 4.0 per cent residual intraductal stones when operative and completion cholangiograms were made in 407 patients.

2. THE PROBLEM OF EVALUATION OF THE PATIENT WITH A POOR RESULT FOLLOWING CHOLECYSTECTOMY.

The "postcholecystectomy syndrome" may be produced by retained or recurrent stone, pancreatitis, carcinoma of the ampulla or pancreas. There are, however, many patients with a poor result following cholecystectomy who do not have any of these entities responsible for their symptoms. Cattell, Colcock and Pollack[12] operated 100 patients with stenosis of the sphincter of Oddi and stricture of the ampulla of Vater; they felt that this condition may be responsible for repeated attacks of severe pain in the right upper quadrant with or without associated jaundice or dilatation of the common duct. Kirtley[18] believes that ampullary stenosis is the cause of "postcholecystectomy syndrome" in the absence of common duct stones or recurrent pancreatitis, excluding malignancy. del-Valle,[20] writing on this subject in 1928, felt that it was possible to make a diagnosis of "fibrotic odditis" preoperatively on clinical grounds, i.e., a typical radiation to the vertebral column at the level of the first lumbar vertebra and also toward the left scapular angle.

Although the radiation of pain may at times be helful, it is certain that the advent of intravenous cholangiography has been of substantive value in the diagnosis of ampullary stenosis. Wise and O'Brien[21] studied the results in 300 intravenous cholangiograms. In 142 patients, the bile passages were successfully visualized after cholecystectomy, so that the diameter of the duct could be measured. These data were compared with the results of actually exploring the duct for obstructions. All ducts dilated to a diameter greater than 15 mm. were found to be partially obstructed, and all those lower than 8 mm. were unobstructed. The group, therefore, with measures between 8 and 15 mm. in diameter formed a "grey" area in which the measurements were of no value in determining the presence or absence of obstruction.

3. THE PROBLEM OF RECURRENT DUCT STONE.

Glenn[22] analyzed the problem of recurrent or retained common duct stone and demonstrated an incidence of 4.3 per cent residual stones after negative duct exploration and a 9.3 per cent incidence after positive duct exploration. The problem of recurrent common duct stone is complex and has a direct relationship to distal duct stenosis. That stone reformation can occur is indisputable. Johnston[23] described a case of stone reformation in the presence of obstruction; the patient was re-explored two and one-half years after initial choledocholithotomy and was found to have over 100 small stones in the common duct which was dilated proximal to a stenotic obstruction of the ampulla.

The possible role of ampullary stenosis in stone reformation cannot be proved in man because of the impossibility of absolutely eliminating other possible etiologic agents, such as undetected stone or "sludge." There is considerable experimental evidence, however, to indicate that stenosis does play an important role in the production of recurrent common duct stones. Immoglu[24] produced gallstones experimentally by causing incomplete stricture of the common bile duct. Several animal species were used and cellophane sealing tape dusted with dicetyl sodium phosphate (a substance well known to produce fibrosis) was sutured loosely around the terminal common duct. Fibrosis occurred with regularity but to different degrees. It appeared that narrowing but not total obstruction provided the optium situation for stone development. It was suggested that the counterpart in man may well be distal common duct stenosis. Bisgard and Baker[9] established temporary but long standing incomplete common duct ligatures in goats and varied the

point of partial ligation. In those animals in which the duct was ligated proximal to the entry of the duct of Wirsung, no stones occurred. However, in those instances in which the ligation was carried out just distal to the confluence of the biliary and pancreatic ducts, stones were produced in three of five experiments. These authors regarded reflux of pancreatic juice as a causative agent for stone formation.

One proposed to deal with the problem of residual or recurrent stone has been proposed by Jones, et al.[25]—the use of transduodenal choledochoduodenostomy (sphincteroplasty) for the prevention of residual common duct stone. They believe that when hepatic stones, multiple common duct stones, viscid bile or ampullary stenosis are encountered at choledochotomy, a prophylatic procedure should be performed to eliminate subsequent obstruction at the lower end of the common duct, and that transduodenal choledochoduodenostomy (sphincteroplasty) meets the requirements more fully than does either ampullary dilatation or sphincerotomy. The procedure was also recommended at the time of secondary choledocholithotomy.

Thus, it is clear that one of today's major challenges in surgery of the biliary tract is diagnosis and treatment of ampullary stenosis. The following case will illustrate a preferred method of management.

CASE REPORT

Case 2: A. K., a 63-year-old white female, had symptoms of gallbladder colic with an intravenous cholangiogram demonstrating common duct stones. At operation, manometric studies of the common duct were first obtained via needle puncture, and a 20 cm. pressure recorded. Cholangiogram revealed stones in the duct, but no obstruction (Fig. 1). The duct was then opened and multiple stones removed. The smallest Bakes dilator (3 mm.) could not be passed easily into the duodenum. A cholecystectomy and transduodenal sphincteroplasty were done. Cholangiography was repeated at the conclusion of the operation and no further stones noted. During the postoperative phase the common duct pressure was at a consistently low level (6-9 cm. water). One month postoperative, a T-tube cholangiogram was done again, reported as normal, and the T-tube removed.

The preferred, diagnostic technic is that of obtaining manometric study of common duct pressure accompanied by cholangiography before opening the duct. If the pressure is elevated and if cholangiography indicates no obstruction by stone to the flow of bile, and after exploration of the duct and removal of stones, a 3 mm. dilator fails to pass easily, then the diagnosis of stenosis may be made on firm ground.

Fig. 1. Illustrating manometry and cholangiography before opening the common duct in a patient with known stones.

Manometry for retained stones

Manometry is an aid in detecting retained stones.

Case 3: L. T., a 46-year-old white male, had a ten-year history of upper abdominal pains with repeated negative roentgen studies of the upper gastrointestinal tract and gallbladder. In July, 1963, he was operated, after roentgen studies revealed gallstones. The gallbladder was removed along with stones from the common bile duct. Operative cholangiogram and repeat T-tube cholangiogram at the end of his hospital stay were negative. However, because of manometric elevation in pressure during office visits (17 cm.) and the occurrence of hyperpigmented "sludge," a repeat cholangiogram was obtained and small hepatic

Fig. 2. Retained common duct stones detected after two prior "normal" T-tube cholangiograms.

stones were identified (Fig. 2). The T-tube was left in place three months, and frequent irrigations with water, saline, hydrogen peroxide and, later, cholorform were carried out. Five cholangiograms were done during this month period. Complete "clearing" was established with "normal" manometrics and cholangiograms prior to removal of the T-tube.

Case 4: S. C., a 65-year-old jaundiced white male, in December, 1965, had cholecystectomy followed by exploration of the common duct and removal of multiple stones. Manometric studies prior to choledochotomy indicated a 20 cm. elevation of pressure. After removal of stones, a 3 mm. Bakes dilator was passed easily into the duodenum. A choledochoduodenostomy was carried out with T-tube drainage proximal to the anastomosis between the dilated duct and duodenum. Postoperative pressures were in the range of 3-7 cm. of water, and roentgen studies indicated both free egress of dye into the duodenum and also ingress of swallowed barium into the common duct (Fig. 3). The T-tube was removed one month postoperative.

Exhaustive surveys of the literature by Glenn,[22] Johnston[23] and Smith[26] report a range in incidence of residual stones from 2 to 28 per cent. Case 3 illustrates the value of manometry in detecting retained stones. Case 4 is illustrative of "prophylactic" choledochoduodenostomy to prevent recurrent stone formation by obviating ductal obstruction. Madden,[27] et al., performed side-side choledochoduodenostomy on some 62 patients and concluded that this was the best prophylaxis relative to the need for reoperations on the common duct.

Fig. 3. Ingress of barium into the common duct after choledochoduodenostomy.

Manometry in extra-biliary obstruction

Manometry may be an aid in following the status of extra-biliary obstructive masses, as is illustrated in the following cases.

CASE REPORTS

Case 5: R. L., a 44-year-old white male, was operated in September, 1964, and a huge retroperitoneal abdominal mass was thought to be "giant follicular lymphoma." A subsequent pathologic diagnosis of Hodgkins disease was made one month later from a chest wall lymph node. Roentgen therapy was used extensively, along with chemotherapy, to successfully "melt" the abdominal mass. Roentgen therapy was also used to treat a destructive process involving the first lumbar vertebrae. Because of spinal cord compression at this level, a laminectomy was done on March 5, 1965, and the patient became jaundiced in the postoperative period. Two weeks after the laminectomy, the common duct was explored, found to be filled with "sludge" under extreme pressure (30 cm. water). The common bile duct was obstructed at the ampulla as a consequence of retroperitoneal tumor mass. A bypass cholecystoduodenotomy was done (Fig. 4). The common duct pressures remained high (20 cm.) until six weeks postoperative at which time the T-tube was removed.

Fig. 4. Distal common duct obstruction due to Hodgkins lymphoma.

Case 6: G. V., an 83-year-old white male, had cholecystectomy in March, 1965. He gave a history of having had prolonged hospitalization, a poor recovery and chills and fever after discharge. In July, 1965, he developed a biliary fistula and was reoperated. A large stone was extracted from the common duct, and manometric and cholangiographic studies were normal after stone removal. During the postoperative period the manometric studies indicated the occurrence of a complete block with pressures elevated over 30 cm. of water. A repeat T-tube cholangiogram revealed a "large obstructing stone" at the distal end of the common

duct (Fig. 5). He was reoperated and the obstruction found to be a large lymph node compressing the distal duct.

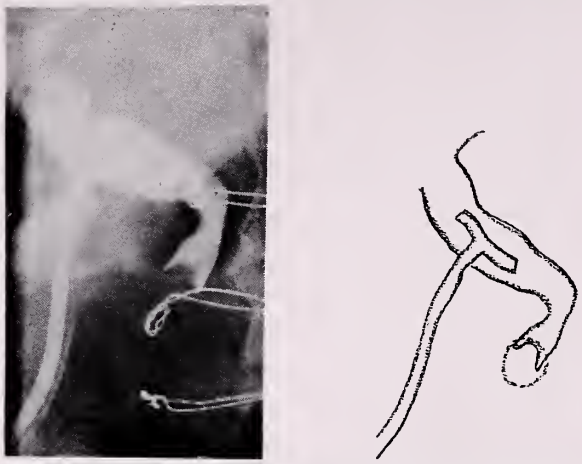

Fig. 5. Postoperative distal common duct obstruction due to inflammatory lymph node interpreted erroneously as a "large obstructing stone."

These cases represent difficult problems in diagnosis and management. Similar experiences have been obtained with extrahepatic pancreatic compression of the ductal system. The manometric readings are of value in following the status of the obstructing mass, be it progressive or regressive. In the instance of postoperative obstruction due to an enlarged lymph node, the error in management can only be avoided by recognizing this phenomena and being alert to its possible presence.

Manometry in diversion decompression

Manometry may aid in determining the effectiveness of cholecystotomy and choledochotomy with tube drainage as diversionary tracts.

CASE REPORTS

Case 7: F. E., a 70-year-old white male, had several hospitalizations in recent years because of severe recurrent pancreatitis associated with a non-functioning gallbladder by roentgen study. Operation was repeatedly postponed because of arteriosclerotic heart disease and emphysema. Finally, in October 1965, he was operated because of the increasing frequency and severity of the attacks. An inflammatory pancreatic mass necessitated splenectomy, distal pancreatectomy and transverse colectomy because of involvement of these organs. The gallbladder was drained through a large catheter; no stones were found. The initial pressure of the gallbladder was 30 cm. but during the postoperative period, it dropped rapidly to 20 cm. and 10 days later, to 10 cm. at which time a cholangiogram through the drainage tube yielded normal findings (Fig. 6). The tube was removed one month postoperative.

Fig. 6. Cholecystotomy as a decompressing tract following distal pancreatic resection.

Case 8: I. R., a 62-year-old white female, was operated following several recent episodes of severe pancreatitis. She had known gallstones and had become jaundiced. Chest x-rays indicated bilateral pleural basilar densities followed by a persistent right sided density. The upper gastrointestinal roentgen study revealed a right sided subdiaphragmatic mass with displacement of the stomach to the left. At operation on May 14, 1962, a huge right sided pancreatic pseudocyst was drained, cholecystectomy performed, and multiple stones removed from the common bile duct. After removal of stones, the common duct pressure was found to be normal and postoperative values remained within normal limits.

These two cases recall the value of decompression of the biliary tract in the management of pancreatitis and its complications. The manometric studies are of real help in evaluating return of the ductal system to a "healed" state.

Summary

The measurement of intraductal biliary tract pressures is helpful in several problem areas of biliary tract surgery.

1. The problem of deciding the proper time to remove an indwelling T-tube can be quite significant at times, especially if the surgical procedure included "dilatation" of the sphincter, sphincterotomy or sphincteroplasty, or if there was present coexisting duodenitis or pancreatitis. Multiple postoperative manometric readings can be easily obtained and help to follow a "healing" duct to "normal."

2. The problem of determining the existence of ampullary stenosis is quite real and will probably loom large on the horizon of

major surgical challenges. This triad of operative findings is suggested as a useful criterion for the diagnosis of distal common duct stenosis:

a. Elevated common duct pressure *before* opening the duct.

b. A dilated common duct (8 mm. or greater) without obstruction by stone as determined by operative cholangiography before opening the duct.

c. Failure of easy passage of a 3 mm. Bakes dilator through the ampulla after choledochotomy.

3. Despite our efforts, retained stones are likely to plague us. Manometric studies postoperatively may give rise to a suspicion of intraductal obstruction, from stones or "sludge", and lead to cholangiography for confirmation.

4. There are certain unusual but difficult cases of extra-biliary obstruction due to lymphatic masses, pancreatic edema, and duodenal inflammation that will change as a consequence of treatment. Therapeutic response may be followed with manometric studies, avoiding unnecessary cholangiography until indicated by manometric changes.

5. When a diversionary stream via gallbladder or common duct is desired to afford relief of the "common channel" pressure, the measurement of intraductal pressures can be of value in determining the effectiveness of the maneuver. •

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Prosaic urology

Joseph E. Clark, MD, Casper

We should spend a little time thinking about prosaic matters in urology.

It is exciting to talk about bilateral nephrectomies, with hemodialysis and renal transplantation, but few of us practicing away from a medical center have the opportunity to learn about these procedures—much less use them. The majority of urologic illnesses are treated by less dramatic methods, and these everyday problems are taken care of by the local physician, without using complicated diagnostic or therapeutic measures. Our handling of the common problems should be reviewed from time to time to avoid settling into a rigid routine that may not be completely rational.

The most frequent problem we see is the woman with cystitis. During an acute attack, profuse bleeding can occur, sometimes with clots. This bleeding is alarming but is not really a serious danger. During acute hemorrhagic cystitis, there will be burning and frequency, although some patients will have to be questioned carefully to elicit these symptoms. If there are symptoms of bladder irritation and bloody urine, the patient can be reassured and treated with antibacterials for a few days before going into any extensive examination.

The patient with a single episode of bladder infection is rapidly cured and does not come to attention again, but the one with recurrences definitely requires more attention. For the latter, cystoscopy should be advised and intravenous pyelography reserved, pending the patient's progress. If there are localized renal symptoms, with flank pain or fever during the attacks, then pyelograms should be done soon in the course of evaluation.

Most of these women with recurrent troubles will be found to have an urethritis. Many names are used to designate this disorder—urethropathy, stricture, or cicatricial urethritis. They are best treated by periodic urethral dilation and an occasionaly course of an antibacterial. During an acute infection with purulent urine, no instrumentation should be done. The dilations should be delayed until antibacterials are used and the urine clears. There is no reason why any physician cannot provide these treatments. They require some advanced planning and a few items of special equipment, but all of this can be arranged if there is adequate communication between the physician in charge of the case and the consulting urologist.

Simple antibacterials are preferred at first. If the urine does not clear rapidly, culture with antibacterial sensitivity determination is done. This will be helpful in directing choice of another drug. There is no particular reason for urine culture with the patient's first attack of cystitis. She will probably clear in a few days with use of Thiosulfil or Gantrisin; and anyway, one must treat her while awaiting the culture and sensitivity report. A helpful drug in a stubborn infection is Furadantin. For long term treatment of

chronic infection, Mandelamine in a dose of 3 to 4 grams daily is useful. This drug is not expensive and will not result in allergy or bacterial resistance. It is not as potent for an acute severe infection as the sulfonamides or tetracyclines.

A comment about incorporation of pyridium in urinary antiseptics is in order. This material is of little therapeutic value, although it may have some psychological effect on the patient as he urinates this orange fluid. It is difficult to remove from clothing, toilets, and the urologist's equipment; it is most difficult to remove from the cystoscopist's trousers, as he will find if he makes a technical error in catching return irrigating fluid during cystoscopy. The azo dyes should be used less often in treatment routines.

Another frequent patient is the man with urethritis or prostatitis. The symptoms of this lower urinary tract infection are variable. Valid symptoms are degrees of bladder irritation, with burning and frequency, or urethral discharge. The popularity of chronic prostatitis as a cause for many ills is decreasing, similar to the focus of infection theory, which is not as popular as it was twenty years ago. The urologist sees an occasional person referred because of fatigue, aching sensations over the body, varying abdominal pain, and other classic symptoms of the depressed patient, for treatment of a prostatic abnormality —the patient has been told that the prostate is the cause of all his troubles! Examination of this individual will reveal a normal urine, normal prostatic fluid and no enlargement or induration of the gland. The consultant is hard put to deliver an accurate report to the patient and to advise proper treatment. The situation is delicate because of the possibility of offending the referring physician. It is disturbing that the prostate can be accused of causing so much trouble. All of us are pressed by our patients for definite answers for the cause of ailments, and for answers to many other questions. We should try to avoid giving an answer that is not well substantiated by facts, although I realize that we often must say something to these curious people in order to get along with other work.

A patient with acute prostatitis can be definitely ill with fever, bladder irritation, and some terminal or initial bleeding on urination. An ample dose of a potent antibacterial is indicated. Instrumentation or a vigorous rectal examination should not be done during the acute infection. Cystoscopy or catheterization will irritate already inflamed tissues. Prostatic massage at this time may aggravate the infection or result in epididymitis. When the acute process is under control, perhaps four weeks after onset to be safe, prostatic massage is done to evaluate the prostatic expressate. If more than 25 per cent of the microscopic field is pus cells, a program of monthly prostatic massage will be helpful in clearing residual, asymptomatic prostatitis. It is realized that argument can develop over the interval between prostatic massages, and that many authorities advise this treatment more often than monthly. My choice of an interval of a month between treatments is arbitrary. Residual prostatitis can serve as a source for recurrences of acute infection. It is important to give an antibacterial, just one dose, with each massage. This treatment is something like squeezing a boil, and I am sure that one may express bacteria into the blood stream during prostatic massage. Administration of antibacterial immediately after treatment will cover this possibility and also help prostatitis because of local transient hyperemia in the prostatic region following the massage. If the prostatic expressate shows no improvement after four to six treatments, and if the patient is relatively asymptomatic, he can be dismissed for six months. After a six months rest, the routine is repeated. All of

us have seen the patient from whom one can express a purulent prostatic fluid any time. This type of patient should be given a rest from treatment periodically.

The patient with complaint of chronic urethritis may or may not have valid symptoms. A urethral discharge or dysuria with pus cell shreds in the first glass urine specimen are positive findings. Many of these men will have various complaints with little physical or laboratory evidence of disease. The direct question, "Are you concerned with venereal disease?" will often reveal the basic problem so that it can be discussed, and the patient reassured. This approach often helps his chief problem, which is fear and feelings of guilt.

In a bona fide non-specific urethritis, a sulfonamide is usually sufficient. In a stubborn, low-grade urethritis, urethral instillation of 10 cc. of 0.5% Neomycin is helpful, and this is left in place ten minutes. Some patients can do this themselves, using the solution and a fourth ounce Asepto syringe. Some men will carry bacteria in the urethral glands and in prostatic acini where a situation of symbiosis exists. The patient and his bacteria live together without irritating each other and no simple measure will cause the shreds to disappear from the first glass urine specimen. I do not know the best treatment for these individuals, except the physician should not alarm the patient with comments, and the least interfering treatment is best.

A few of the every-day problems in urology have been discussed. Patients with these prosaic ailments may sometimes bore us, but to each of them, their problem is just as important as is the problem which requires some exciting treatment, such as renal artery modification for hypertension or renal transplantation, to that patient. The person with these common ailments deserves our consideration and attention. •

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Regional medical programming in Wyoming

Claude O. Grizzle, MD, Cheyenne*

A subject of vital interest to all of us in the health fields.

MUCH IS BEING WRITTEN about Regional Medical Programs. Two issues of the Rocky Mountain Medical Journal have carried recent articles about these programs. In January, Dr. Hilmon Castle of the Utah Intermountain Regional Medical Program outlined the background and broad philosophy behind the legislation (P.L. 89-239, Title IX of the Public Health Service Act of 1965) establishing the concept of Regional Medical Programs. More recently in the May issue of this Journal, Dr. Frank McPhail of the Montana Division of the WICHE Mountain States Regional Medical Program offered more information and narrowed this concept to more practical issues applicable to planning for the Mountain States. In this July, 1967, issue of the Rocky Mountain Medical Journal it would seem appropriate to include another article on the same subject to bring us up to date regarding what is going on in Wyoming and to help piece together some of the ongoing activities in the Rocky Mountain area.

This is an elusive subject, primarily because the Title IX Heart Disease, Cancer and Stroke and Related Diseases Health Amendment is new—with major activity just beginning in 1966—and works through broad criteria and flexibility set by Congress. Broad guidelines have been established also, by the National Institutes of Health which administers the programs through the office of Dr. Robert Q. Marston, Associate Director, National Institutes of Health, and Director, Division of Regional Medical Programs, Bethesda, Maryland.

In Wyoming, three funded Regional Medical Programs (RMP) overlap. The first of these to be funded was the Utah Intermountain RMP on June 1, 1966, which includes parts of western Wyoming. The Western Interstate Commission for Higher Education became the recipient for a planning grant at the request of the four Mountain States without a medical school, namely Idaho, Montana, Nevada and Wyoming, and it was funded on November 1, 1966 as the WICHE-Mountain States RMP. Dr. Alfred M. Popma is the Regional Director with offices in Boise, Idaho, and Dr. Kevin P. Bunnell is the Coordinator from the WICHE offices in Boulder, Colorado. The third program involving Wyoming is the Colorado/Wyoming RMP with Dr. Wesley C. Eisele as Coordinator and Dr. Paul R. Hildebrand as its Director. It was funded on January 1, 1967.

It has been said that if the programs have trouble it will probably come less from overt opposition than from confusion about what is going on. Certainly in Wyoming, with three overlapping programs going on simultaneously, there would seem to be ample opportunity for some confusion to arise. Hence, it is imperative that those of us in Wyoming should be as well informed as possible about the interrelations and activities of these programs.

We should be aware that the former concept of a nationwide system of special treatment centers for heart disease, cancer and stroke and related diseases is not the intent of this programming. Rather, the emphasis is on the development of individual regional programs, determined by the regions themselves, to fit their own needs and circumstances. The emphasis is also upon the rewards of improved patient care through continuing education in advanced technics for various health professionals, and public education leading to an informed citizenry which knows about what is possible and what is available in the direction of better care for

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the individual. Finally, emphasis is placed upon better communication and cooperation among health professionals, medical centers and the communities.

At this point it would seem advisable to clarify some of the framework used as the development of Regional Medical Programming begins to take shape. In the background, this legislation makes it possible for a massive cooperative effort by persons interested in health planning over many areas to focus upon heart disease, cancer and stroke and related diseases. These diseases account for more than two-thirds of the deaths in this nation. Basically, this is a public health concept to accomplish public health goals through organized community effort. Again, the objective is better care for the individual patient with the idea in mind that with improvement in an individual's health, there will follow improvement in the public's health. This widespread and intensive approach has come at a time when massive team effort is in vogue, as with the space program, educational programs and other public programs. It is an effort to capitalize on the cooperative efforts seen during times of crises. At this point, we in the health fields and in social planning need to be cautious and a number of definitions are required before we proceed further. We are not dealing with physical phenomena which are fairly predictable, but instead are striving to plan to provide for human needs and at the same time take into consideration human interactions and human responses. As the primary target we aim to provide any person as much opportunity for survival from one of these diseases as would another with access to one of the nation's great medical centers.

Thus far, we have outlined much of what has been said before. But when we consider what we need in planning, it is axiomatic that the needs of the people must be determined if we are to bridge the gap between planning and delivery or improvement of services. First of all, it is recognized that this is a regional affair, for the needs of one group of people may differ entirely from others in different regions, settings, occupations and with different socio-philosophic backgrounds to name a few of the factors involved. Other needs of a group of people may depend entirely upon how they feel about attitudes of health, the health care available to them and how they feel about what they think they should have available for better health, if they feel they need it at all. Some needs may be common to a variety of groups of people and are obviously factual and apparent; however, we should realize that factual deficiencies or factual assessment of any given community's facilities or services may not represent the needs of that community. This introduces the factor of feeling when we talk about someone else's or our own needs. Hence, facts and needs may not be synonymous. Unless a community feels or is aroused to recognize that improvements are necessary, the factual expression that improvements are desirable may not represent a need for that community. In short, in Regional Medical Programming, we will be dealing not only with the attitudes of the various health care groups in the state, but also with the attitudes of the communities which they serve. Thus, with the multiple variables involved, we in Regional Medical Planning "need" to develop a clear sense of direction by attacking tangible matters first—such as obtaining a data base from which to work. However, in this effort we shouldn't be overwhelmed by the possibility that data collection per se, no matter how sophisticated the analysis of it may be, will provide us with the answers we think we "need." Rather, such data collection should point the way toward patterns and trends to highlight areas for us to consider practical and to emphasize clinic approaches to improve patient care. The broad concept of Regional Medical Planning is in this direction, and the justification for it is in the service we may be able to provide.

Now, how does all of this apply to Wyoming? First of all, there should be no confusion among the three programs working here. Full cooperation is needed and this has been apparent even in the early stages. When our information is gathered, including the factual about facilities, manpower and the like, and when our health community and consumer survey is completed (through the WICHE Mountain States' questionnaire) to assess our existing facilities and performance,

the public's attitudes, educational desires and the things we might think we need in the future, then cooperative arrangements with our neighboring medical centers will have a chance to bloom.

Regional Medical Programming should not only be interested in devising ways to facilitate the dissemination of the latest medical advances and other goals of the guidelines, but should take a long range view of what possible changes it will induce. Basically, our present system of health care has evolved fairly much in balance with our sparse population, vast distances, existing manpower, facilities and community attitudes. It is no accident that those of us who live in Wyoming are here. It is equally true, I believe, that the physical and social structure of Wyoming by and large determines the type of people who do live here. These factors, in addition to the trend to become an interdependent society with its associated expanding commitments and the realization that self-sufficiency just isn't enough, confront us. Regional Medical Planning offers a way to supplement our previous relative self-sufficiency to meet our expanded commitments in the health fields.

On the positive side, we have an opportunity to benefit from regional planning. Soon there will be operational programs going on around us, and some of them will involve us. We should take advantage of opportunities to learn new things and to benefit from them. At the same time, we should be in position to provide the necessary feed-back information to help evaluate the effectiveness of those programs. However, we shouldn't be caught up in a situation of trying to "choose sides" among the various Regional Programs, and we should be vigilant and resist subtle pressures or changes in public attitude which could undermine the respect and ability of our own health professionals to do the best job they can. We need to support our Wyoming health care facilities and services and to provide them with the most advanced means to provide excellent care at the local level. For after all, good medical and health care really begins and ends in the communities where people live. •

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G. L. Smith, MD, Cheyenne

Various types of deafness are differentiated by symptom complex correlated with audiograms.

PATIENTS with symptoms referable to hearing, with or without other associated systemic disease, are a common occurrence in the physician's office. Contrary to emotions experienced with the dimnution of other cardinal senses, loss of hearing is frequently accompanied by a sense of embarrassment to its victim. In our society, most people over the age of 35 have some loss of hearing. They commonly seek the advice of their physician when forced by an annoyed spouse, or by some other symptom-complex associated with a disturbance of function in the otic capsule. Cartoons of Grandma with her ear trumpet, various jokes and quips, and lack of public education of the problem, are more than likely the major cause of this reticence of acceptance of a hearing deficit.

The most common symptoms are ringing in the ears, ear noises (tinnitus), or feeling of the ear being "plugged." The patient will often tell your office aide that he merely wants his ears washed out. Except in the severely hard of hearing, or in one who has become alarmed with a sudden deafness, loss of hearing per se is often not the principal complaint, and a little tactful inquiry is needed to elicit the problem. To handle only his original complaint often results in an unhappy patient, who then becomes even more silent about what is really troubling him.

Any discussion of the abnormal begins with a discussion of the normal. It is realized that methods of determination of the normal is beyond the routine of the average general physician, yet an understanding is needed in order that variations may be better illustrated. Fig. 1 is a simulated audiogram of a person with normal hearing. The double line is at the zero level of hearing threshold, which threshold is recorded in decibels of hearing loss vertically. Horizontally is plotted, in a logarithmic scale, frequency of sound vibration in terms of cycles per second (Hz). The rectangular area in the lower mid portion of the graph is referred to as the critical speech area for reasons that will be explained later. On this graph, the threshold responses to pure tones is represented by an "X" for the left ear and an "O" for the right, the solid lines indicating air conduction and the broken lines indicating bone conduction. It will be noted that in the normal person all four lines parallel, and lie near to the zero reference line.

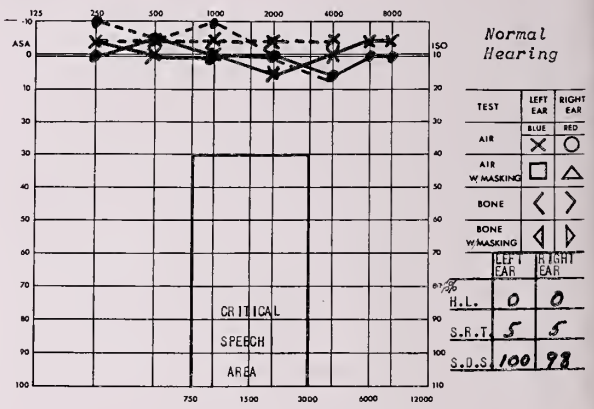

Fig. 1. Normal hearing.

In the lower right-hand corner are three boxes containing figures. The upper one is the calculated per cent hearing loss. This is a relative meaningless quantity, but it has its importance in the courts of law, and most patients like to know what their "per cent

hearing" is. As you will see, it does little to tell you, the physician, how well or how poorly your patient hears in many conditions.

The next figure is the Speech Reception Threshold (SRT), which is a measure, in decibels, of the minimum sound pressure (intensity) level at which the person hears, correctly, 50 per cent of selected spondaic words given to him under quiet conditions. The last set of figures is the Speech Discrimination Score (SDS), expressed in terms of the per cent of a single syllable, phonetically balanced, words that he hears correctly at 40 Db. louder than his SRT. Inasmuch as we do not hear pure tones in most of our hearing experiences, it is these last two sets of figures that are of the greatest importance in evaluating hearing.

In the next illustration, Fig. 2, we see the most common cause of hearing loss, presbycusis, or deafness due to age. A quick comparison with the previous example quickly tells the most inexperienced that this deviates from the normal, and that there is indeed a hearing loss. You will note that the per cent hearing loss shows "good" hearing but note the speech responses. The SRT is depressed, as is the SDS, proving this man's contention that he hears well enough. It is just that he can't understand what is being said, particularly in the presence of noise, or when many people are talking at once. You will note that the pure tone curve cuts into the upper right-hand corner of the critical speech area of the graph. It is in this range of sound frequencies that most of the consonants of language lie, so that a man with this type of audiogram has difficulty in distinguishing the difference between "sox" and "fox,"

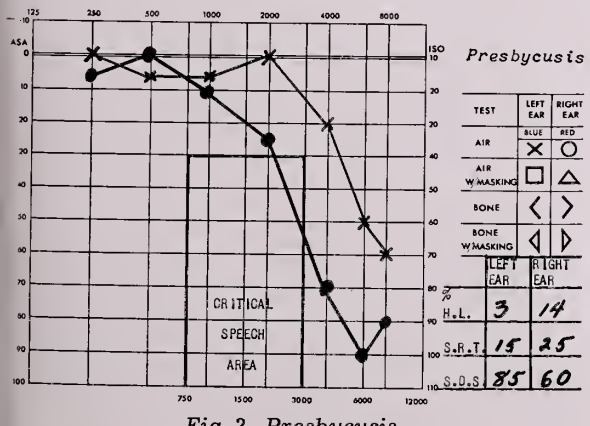

Fig. 2. Presbycusis.

"bog" and "dog," or whether a word is singular or plural. Outwardly he doesn't believe he is going deaf, but he feels that "this confounded younger generation just don't talk plain enough." His complaint is that his ears are plugged, or he has a little buzzing in them, or " 'the old lady' wants me to get my ears checked." Vertigo may be present but is seldom much of a factor.

The next audiogram, Fig. 3, illustrates probably the next most common type of deafness, and it is the up and coming legal ringer. This is noise-induced deafness, or acoustic trauma. It has long been known as "boilermakers' deafness" as it formerly was noted most commonly as a result of riveting hammers in various metal-working shops. As our civilization becomes more mechanized, our machines are making more noise, and throughout the world this is becoming a double nightmare of compensation and rehabilitation. The audiogram resembles presbycusis except that you will note an upward

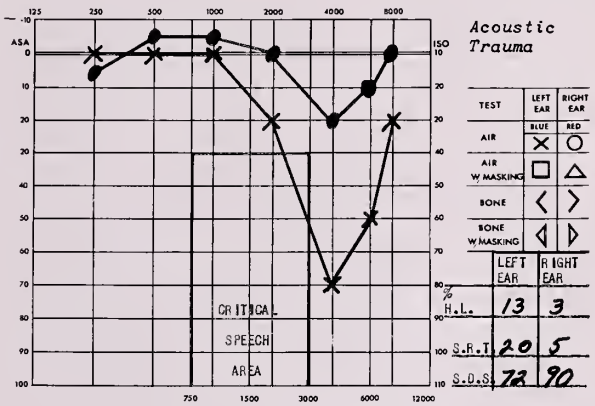

Fig. 3. Acoustic trauma.

swing in the six and eight thousand Hz. range. Again, per cent hearing loss has little meaning when compared to the SDS and SRT. Generally, the patient is seeking both compensation and rehabilitation of a hearing problem. Tinnitus, particularly when in quiet surroundings, such as when he goes to bed at night, is a common complaint. Vertigo is rarely present except in acute acoustic trauma, such as after an explosion, or gunfire. His complaint about his hearing is nearly identical to that of the person with presbycusis in that he has trouble distinguishing words and mishears what is said to him. Because of the pathology of his hearing loss,

his loss in speech discrimination is generally more marked than would be expected from his pure tone audiogram. Records on such cases are always a potential legal document. He further presents a problem of rehabilitation and prevention of further hearing loss, the latter being best solved by either removal of the noisy environment or adequate ear defenders.

The next illustration, Fig. 4, is an audiogram indicating conductive hearing loss. It will be noted that the bone conduction is normal on the left while the air conduction is poor. On the right there is a drop in the higher tones in an otherwise normal bone conduction, and again air conduction is poor. The SRT is poor, as would be expected, and about the same threshold as the air conduction. The SDS is good, although slightly depressed, on the right. Two conditions are represented: a pure conductive loss on the left and what is referred to as a *combined* loss on the right. On the right there is the

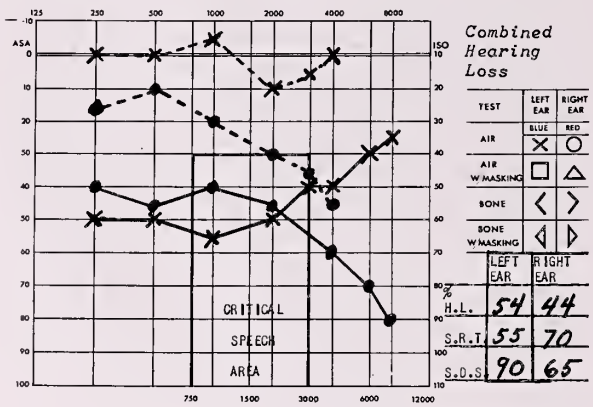

Fig. 4. Combined hearing loss.

sensorineural loss (the high tone drop and somewhat poor SDS) best seen in the bone conduction curve plus a significant conductive loss. This type of hearing loss is seen in the person with chronic mastoiditis, tympanic membrane perforations, otosclerosis, and any other condition which would interfere with the conduction of sound through the canal or across the middle ear. It is the most frequent type of hearing loss of children, usually from recurrent ear infections and tonsillitis. In children it often goes unnoticed until detected by a school audiogram, and it is generally caused by mucous in the middle ear space. This is the type of loss seen in the person whose ears stop up during descent in an aircraft, in the mountains, in skin-diving, and during a "cold." Complaints vary from a full feeling in the ears to that of hearing loss. Vertigo will be present, dependent upon the causative factors, but rarely seen in children, regardless of cause. The ideal treatment is to restore the integrity of the conductive apparatus. Infectious processes and otosclerosis frequently give rise to the combined loss illustrated in the right ear and therefore limit the degree of hearing restoration that can be obtained. Diagnosis is easily made by examination of the ear and proper use of the tuning fork.

The next audiogram, Fig. 5, the classic Meniere's Syndrome, is represented unilaterally, as that is the most common way it first presents, but it is generally a bilateral disease. At first glance, the curve of the pure tone responses resembles the conductive loss shown before, but the bone conduction is nearly identical to the air conduction in the affected ear. From the per cent hearing loss things don't look so bad, but the SDS indicates differently, and the patient will quickly tell you just how bad things really are. Many of these patients suffer from a problem called recruitment, which is most simply defined as distortion of sound to the point where things sound twice as loud as they really are. This recruitment makes rehabilitation a serious problem if the fitting of a hearing instrument is contemplated, because of the distortion of sound coupled with intolerance of even moderately loud sound that frequently may be present. Tuning fork tests will occasionally indicate recruitment but more often than not will show only a sensorineural

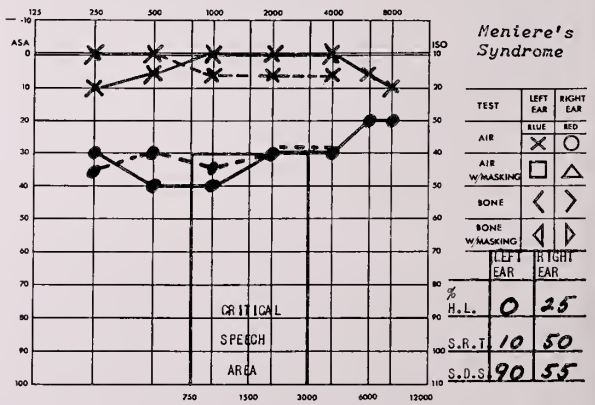

Fig. 5. Meniere's Syndrome.

hearing loss, the recruitment being detected only by more elaborate methods of testing. In general, vertigo is a more pressing problem than is the hearing loss or tinnitus, but in chronic cases the hearing problem can be a serious one and tends to worsen with time.

Fig. 6 is an audiogram of hearing loss more frequently seen than recognized. The patient usually presents with complaint only of a full feeling in his ear or a ringing or roaring sound, with onset perhaps associated with a recent "cold." He may or may not complain of vertigo. This is the pattern of an early acoustic neuroma. It will be noted that the hearing loss is of a sensorineural type and, from the pure tone audiogram, appears to be slight. Speech testing shows a marked loss in speech discrimination which is out of proportion to the pure tone loss. An extensive workup is indicated. The problem is not amenable to medical therapy, except symptomatic. Most authorities feel that this condition should be suspected in all cases of the unilateral ear complaints in the middle years of life. Therefore, the best diagnostic tool is a high index of suspicion in persons with unilateral hearing loss. Tuning fork testing will not be diagnostic and may be confusing. X-rays, on occasion, will demonstrate the abnormality of the internal auditory canal on the affected side.

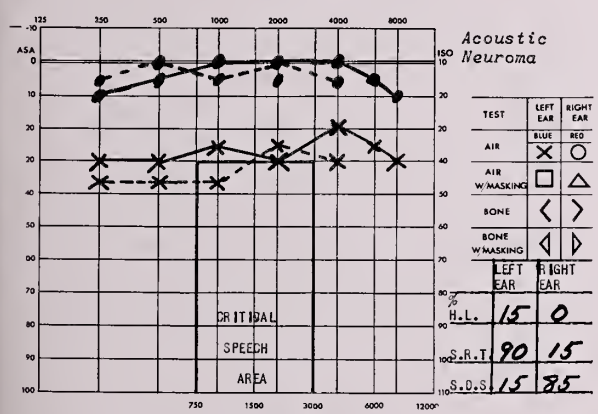

Fig. 6. Acoustic neuroma.

Lastly, Fig. 7 illustrates severe damage or degeneration of the eighth nerve. This is the pattern frequently seen in congenital hearing losses, in hearing loss due to meningitis, drug toxicity, etc. It is also seen as the end result of mastoiditis, fractures through the cochlea, and advanced presbycusis. The patient is obviously very hard of hearing, being able to preceive only very loud sounds and not able to comprehend speech. Other abnormalities of function of the otic capsule may or may not be present. While a child may appear to be totally deaf, accurate testing may indicate this type of audiologic response, which is of significance in that it indicates some sound perception is present. This is most important in the education and development of a child, for such sound perception can be utilized to teach the child speech and speech reading, and making that job of education much easier. In the adult, the limited sound perception can be utilized in a similar manner but one cannot expect amplification, such as with a hearing instrument, to restore serviceable hearing. Speech reading instructions will be needed in order to effect rehabilitation. The diagnosis of this type of deafness is usually an audiometric one. Tuning forks do not produce sufficient sound intensity for perception with such severe loss. Noisemakers, such as the Barany Buzzer, may give an idea of the problem, but are not accurate.

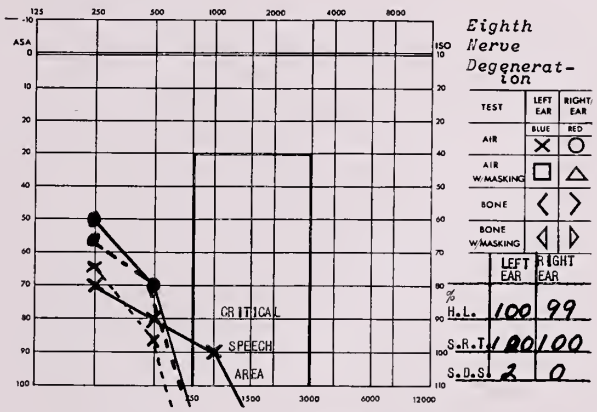

Fig. 7. Eighth nerve degeneration.

In summary, hearing loss can be a simple problem of diagnosis and management. Often the patient, in describing his problem, will tell you the diagnosis before definitive testing is done. Many are reluctant to admit that they are "deaf," and one must first penetrate their "smoke screen" to ascertain the true problem. The most useful single aid to the diagnosis of deafness is an inexpensive tuning fork, and the knowledge of how to use it.* •

*Clinical Symposia (Ciba), Vol. 14, No. 2:45, April-May-June 1962.

Brief psychotherapy in dermatology

John R. Bunch, MD, Laramie

Psychotherapy often aids specific treatment. It is applicable in other specialties as an integral part of the doctor-patient relationship.

DERMATOLOGISTS are frequently confronted with patients who have a disordered function of personality underlying their skin manifestations. Brief psychotherapy could be used to assist these patients to understand the relation of their mental stress to their cutaneous condition. In employing this modality, it is well to remember that there are two kinds of psychotherapy: (1) uncovering, in which deeply ingrained pathologic memories are revealed and an attempt made to remake the patient's personality, and (2) covering, in which these hidden pathologies are covered over, only lightly scratched and no attempt made to convert the patient's personality. It is the latter method with which we, the non-psychiatrists, may deal.

Four to fourteen minutes can be all the time required for brief therapy. We are imbued with the idea that psychotherapy requires an hour and feel unwilling to allot that span of time—indeed cannot economically do so. However, the hour session is for the psychiatrist to use, not for the non-psychiatrist to belabor. Our purpose can be simply and quickly accomplished in a receptive patient, requiring, perhaps, only one or two interviews. Tools at our disposal include facilitation, confrontations, silences and questions.

Facilitation is used to establish rapport with the patient and is best manifested through a friendly, interested manner. Any encouraging gesture, a smile, a lifted eyebrow, or a slight nod of the head indicates to the patient that we are ready and willing to listen and encourage him to begin or continue his story. The response of the patient to the physician's facilitation is a good indication of his treatability. It also serves to give a good indication for cessation of treatment, for if the response is poor or unwilling, grudgingly given, this patient is probably not a candidate for brief psychotherapy. However, if the story unfolds easily, quickly and completely, only a short time or a few sessions are necessary.

Confrontation is a more gently prodding lever. If facilitation fails, a simple observation of fact without critical inflection in the questioner's voice may start the story rolling or undam it if it gets hung up. "I notice your nails are chewed" or "Your eyes look sad" are examples of confrontation.

Silences should be used for only short periods of time. They serve only to make the patient (and the physician) uncomfortable and are not kindly or gentle measures. The doctor is there to make the patient more comfortable, not less so. Used properly, the silence of the examiner may evoke excellent response. It should be an expectant, friendly silence, accompanied by a brief smile but if prolonged, broken by a confrontation or a question. This break helps prevent transference by the patient, which we would aspire to avoid.

The question is a more forceful tool and as vigorous a means as this type of therapy requires. A question may start the whole story boiling again and also can be used to turn a straying story into the more productive or useful channel of thought. It will usually be directed at some point the patient has revealed since we want to deftly extract the problem, not literally yank it out. Make

questions open-ended and enlarge on patient's answers if necessary. Once the patient has begun to expound, the brief therapist most easily facilitates by an open reception. Repetition of the patient's last word or key word in his previous sentence is a useful encouragement. The interviewer aims to make this a therapeutic experience, not a traumatic one. Our object is to clarify the patient's present situation, not to bewilder him. Therefore, the less we say, the more the patient reveals, and the more we find out.

The initial interview may reveal a great deal, but the therapist is not to draw hidebound conclusions, for he may assume a wrong interpretation applies. The patient may give one impression, but may feel differently. Observations should be stored for future use. Several interviews may be necessary, but the length of the interview may stay short. The sessions could be at weekly intervals, but if more frequently required, the patient is probably not a candidate for this therapy. Four to six sessions are usually all that will be needed.

A systematic approach should be used. Find out what you need at the first interview and tell the patient he will need only four sessions or six. If a goal is in view, both doctor and patient will strive to attain it, the relationship will be more objective, and there will be less time for the patient to begin to see the doctor as something other than he is

The object of this therapy is to bring about as much change in the patient as possible in a short length of time. We want to help the patient deal more effectively with his present situation, and enable the therapist to be the light along his path to "illuminate the present." For the thing that ails the patient is his present strife. A neurotic interprets the past as the present and lets the past become confused with the now. When he talks about the present he is fusing it with the past. Wife and mother may be really the same person to him and his hurts of the past are the hurts of the present (at which we aim).

In later conferences, the doctor sets the pace, limits the number of sessions and since there is only so much time, dissects out the important issues and brings his diagnostic skill to bear on the patient's problems. All the technics available may be used as long as they are gentle—reassurance, the magic of suggestion, support, exhortation, advice or subtle innuendo, depending on requirements and including interpretation. At the end of the allotted time, the doctor may tell the patient he is better, or cured, or able to carry on. This gives the patient confidence that he can deal with his feelings in a non-neurotic way and may well provide a real stability to his results.

CASE REPORTS

Case 1. S. S., 17-year-old male, presented himself with severe pustular acne over face, back, chest and neck. At the first interview he showed a stooped posture, hanging head, inability to smile (other than an apparently forced attempt), and a tendency to look at the floor as he listlessly spoke.

Acne therapy was instituted and over the next four visits brief psychotherapy was gently introduced in 8 to 12-minute sessions. He readily divulged that his grades in school were at the failing level, he had been unable to concentrate, had felt his boy friends had forsaken him and that there was no interest in dating or girls' attentions. His time was spent in staring at the wall when he should have been studying, and he preferred to be alone. A gentle question revealed that he had considered suicide.

Then this story unfolded: his acne was only an unhappy factor. His real problem lay in an unhappy family situation in which an alcoholic father and a resentful mother loudly fought and abused each other, the father going on periodic drunks and the mother burdening her son with excessive responsibilities.

In two more conferences of 12 minutes each he discussed these problems and was rapidly beginning to readjust. His acne was clearing beautifully when his father went on a binge before Christmas and his mother "took down the tree." He was able to say, "I'm going skiing with my friends"—and he did.

Case 2. A. J., 18-year-old female, was first seen because of severely pitted, erythematous acne with pustular component over entire face and forehead. Her hair was allowed to fall over her face and bangs covered her acneiform forehead. The examiner felt she was hiding behind her hair.

During the course of acne therapy it was learned that she was engaged to a young man who was in prison for one year and that she was "being faithful" to him, writing letters every week. Her grades had fallen to the failing level, and she spent most of her time in silent contemplation in her room. No method was availing to break through her reserve or establish contact. Her parents were finally advised to seek psychiatric help for her, and the examiner, relaxed into friendly routine, continued interest in her daily life.

After her parents had pressured her by sending

her to a psychiatrist she suddenly turned to the examiner with "What shall I do?" and the whole story came out. Then ensued four visits of 14 minutes each in which she herself resolved to return all of the convict's gifts and to sever relations entirely.

Her hair was then cut to reveal her face and the bangs shortened over her forehead. At last report she was interested in a sailor and her grades were up.

This girl resisted confrontations and questions but responded to a persistent friendly interest.

Case 3. D. M., 16-year-old female with very mild acne, revealed a disturbance and lack of confidence in herself by unceasing chatter and by defense against friendly inquiry by changing the subject. During acne therapy, it was revealed through gentle confrontations that she was unable to decide whether to "give herself" to her adoring boy friend. Her family was objecting to his unceasing presence in their home, and she related that he was more considerate of his mother than he was of her.

The boy friend had of late been seeing her later and later each evening and she feared she was losing him. She wondered if "giving herself" would hold him. One question, "Do you think it will?" was all it took for her to discuss every side and decide that she would accept the fact that this romance was over (8 minutes).

Case 4. C. B., 19-year-old male, was examined and found to have severe pustular and cystic acne over face, neck, chest and entire back. He was quiet and defiant, having been recently convicted of murder in the second degree along with two of his companions involved in a gang attack on a contemporary.

While acne therapy was proceeding, attempts at brief psychotherapy were met with silence or at most "grunts." Incisions and drainage of multiple pustular and cystic areas were stoically tolerated. His long hair and bangs remained uncut despite advice to expose his acne riddled forehead.

At about the third visit the examiner lapsed into only friendly inquiry concerning the status of grades, school, athletic events and a sister who was also taking treatments for acne. On the sixth visit in response to a query, "Is there anything at home you don't like?", he replied "My father"—and lapsed into even more complete silence.

At the tenth visit the physician stated, "I'm glad you can understand your anger at your father, but lots of kids are angry at their dads and it's okay as long as they don't slug their dad." Then one question was asked as to whether he would finish school before his appeal was heard.

The next visit his bangs were off and he had a smile and two teachers called to remark that there had been a terrific change for the better in him. He was actually garrulous in his later discussions of his problems.

The examiner had thought his efforts were in vain but apparently the interest shown and acceptance of the boy's problem had penetrated.

Case 5. W. C., 75-year-old female, was treated for seborrheic keratosis by surgical removal and in the course of after visits it was found she had a deep boring epigastric pain. Since she absolutely refused to see another physician, a gastrointestinal series was ordered and she was found to have a hiatus hernia with an ulcer in the herniated stomach. Antacids, diet, and anticholinergics were prescribed, and one confrontation put. "You seem to be upset." She cried, and said she was worried about her husband's failing health (four minutes).

At the next visit she stated without prodding that her husband always wore the same shirt and wouldn't wear his teeth (3 minutes). The third re-check was opened with "I think I've been upset since my father died in 1903" (63 years ago). Then ensued 12 minutes of uninterrupted self-analysis during which she brought herself to the present and stated she hated to see her husband failing because she was afraid to see him dead like she saw her father when she was 12.

Her ulcer was healed in four months.

Discussion

Situations in which brief psychotherapy may be used are fairly clear cut: 1. The patient should be mature and still functioning in the accustomed social role, whether it be earning a living, keeping house or regularly attending to his schooling. 2. The symptoms should be of recent onset and due to a fairly recent precipitating circumstance. 3. There should be a nearly clear-cut reaction evidenced by the patient.

The symptoms may include depression, anxiety or multiple somatic complaints. Important items for which to search may include parental role traumas, a new child in the household, pregnancy, new job, chronic illness, or traumatic losses such as a loss by death, loss of companionship or sexual compatibility. Even areas of threatened loss of authority may be investigated for such trauma as competition from wife, a brother who was promoted, a sister, any situation which may mean the rug has been pulled out from under the patient. Health situations such as illness, operations, aging (which can be real subtle at middle age), menopause, or menstrual periods may be causative.

This is not the treatment of choice for a decompensated person whose basic defenses have cracked. The patient must be able to mobilize his assets and cope with his trials. He may be insomniac and anxious, but if he is still functioning this modality is worthy of a trial.

Do not use this method in severe neurotic states of long standing, phobias, hysterical paralysis or poorly matured persons who have to be thawed out. Do not use this method for a patient who has a psychosis of any kind, nor for the severely depressed person, the schizoid, or even the passive dependent person. Use every means at your command to get these patients to a competent psychiatrist.

Brief therapy is also contraindicated in the deeply ingrained neurotic, the suicidal, the patient with organic brain disease, or any psychopathologic state such as addiction or perversion. A severe psychosomatic illness is not to be treated by this means (ulcerative colitis).

However, brief therapy may be used as a preparation for deeper therapy. The brief therapist should attack the problem just as if he were going to do the deeper treatment and may thereby make psychotherapy in more experienced hands more acceptable to the patient. The initial interview may not reveal the depth of the patient's disturbance but if at any time the physician becomes aware of it, or meets too much resistance from the patient, he should withdraw and accept the fact that brief psychotherapy is a definitely limited method of treatment. •

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[2] Enelow, Allen E.: Personal communication.

Wyoming Removes Student Practice Requirement

The Thirty-Ninth Wyoming Legislature has removed the stipulation which required Wyoming students attending professional schools in other states under the WICHE Student Exchange Program to agree to return to practice in the state following graduation.

Wyoming, which was one of four WICHE states wtih a practice requirement, currently has 46 students in the program—21 in medicine, 2 in dentistry, 1 in dental hygiene, and 22 in veterinary medicine. Arizona, Idaho, and Nevada continue to require students to either practice in their home state or repay the state all or part of its expenditure in their behalf. There are 258 students from these latter states currently attending professional schools in other states under the WICHE program.

WICHE Commissioner Frank A. Barrett, M.D., Cheyenne, who has served as a member of the Education, Health, and Welfare Committee in the Wyoming Senate, was instrumental in securing the legislative action when he testified before the Ways and Means Committee for removal of the requirement.

Exploding golf balls

R. E. Kunkel, MD, Thermopolis

An unusual but significant eye injury.

FOR YEARS, youngsters have been fascinated by the intrinsic mystery of a golf ball. Resultant exploration has not been without danger. Five eye injuries have been treated in Thermopolis during the past thirteen years. In each instance, the inquisitive child has cut into a golf ball. Since 50 per cent of all monocular blindness results from trauma,[1] two of these cases are reported to draw attention to this very real, and potentially serious, problem.

CASE REPORTS

Case 1: A nine-year-old boy was seen in the emergency room in November, 1966, immediately after the golf ball he had cut open had "erupted" in his hand, filling the right eye with a white, sticky material of toothpaste consistency, but exceptionally tenacious. There was no lid injury. Several large "blobs" were removed with a moist applicator after eversion of the upper lid. One mass was adherent to the lower half of the cornea. This was "peeled" off, leaving behind multiple areas of adherent material. This had an appearance similar to residual adhesive plaster particles. A few were removed with a No. 23 needle tip, but most remained in situ. The eye was irrigated and treated with chloromycetin HC drops and atropine, after telephone ophthalmologic consultation.

The following day, the cornea appeared denuded; treatment was continued. At 72 hours, there was much improvement with no particles visible. After one week, complete healing had occurred and slit lamp and Flueroscein examination were negative, as were x-ray studies.

Case 2: An eight-year-old boy, who had opened a golf ball by peeling off the cover and then cutting the center, received a single charge of the same sticky semifluid, but this was limited to the conjunctival sac. Removal and recovery were uneventful. Prophylactic antibiotics were used locally. There were no lid lesions.

Dr. Penner,[2] who graciously provided his slides for this paper, reported an eleven-year-old boy who cut into a golf ball and received a foreign body injury (Fig. 1). Roentgenograms showed radiopaque material inside the lower lid, despite apparently unbroken skin (Fig. 2). During the ensuing weeks, this boy extruded material from the conjunctival cul de sac, but excision of residual mass was necessary one year post-trauma for cosmetic reasons. Histologic studies showed barium sulfate. Later roentgen studies revealed postoperative absence of the opaque substance.

Fig. 1. Golf ball center: palpebral conjunctiva.

Johnson and Zimmerman[3] reported an asymptomatic eleven-year-old boy whose mother noted his conjunctival lesion. This was excised eight days later by an ophthalmologist with a preoperative diagnosis of pigmented nevus. X-ray diffraction and histochemical studies showed the lesion to be a foreign body, barium sulfate. Retrospectively,

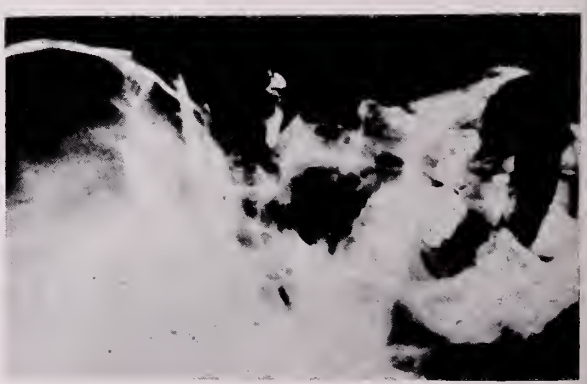

Fig. 2. Golf ball contents: orbital roentgen demonstrated by roentgenogram.

the mother stated her son had been cutting a golf ball apart. He insisted he had not gotten anything in his eye or hurt himself in any way. The one golf ball Johnson examined gave negative results for barium. Three and one-half years later, Dr. Penner's slides (Fig. 3) were compared with Johnson's and were found to present identical microscopic patterns.

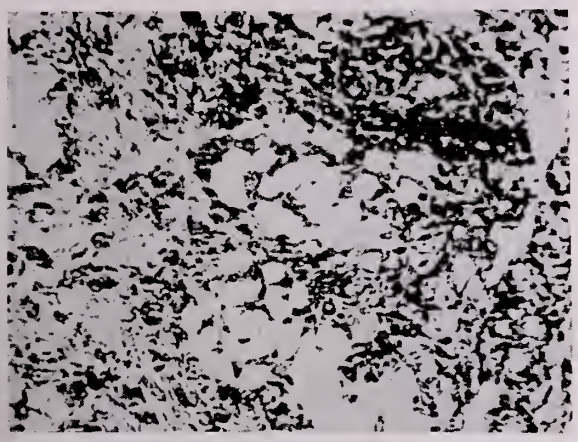

Fig. 3. Photomicrograph of center of golf ball.

Contents of golf ball centers are a commercial secret, a variety of substances being used. Lithopome, a mixture of barium sulfate and zinc sulfide, is used by one manufacturer. All others may not demonstrate the radiopaque quality shown on the films. Caustic materials formerly used for golf ball[4] centers have apparently been replaced by less active substances, but the explosive forces remain a hazard. More recently, some attempt has been made to substitute a plastic, solid centered ball.

Liquid centers are contained under pressures of 2,000-2,500 pounds per square inch. As evidenced by Penner's and Johnson's cases, this may result in subcutaneous or even intra-ocular injection *without any signs or symptoms*. The injection system used for immunization shots by the U. S. services utilizes this high pressure principle. Obviously, for effective diagnosis, a high index of suspicion and x-rays are important.

Luckily, the material is very inert and chemical inflammatory change is minimal. Histopathologic study shows a bland macrophogic response. Only a light polymorphonuclear and lymphocytic infiltration was observed in the eleven day old lesion, while that twelve months old exhibited minimal inflammation.[3] Interestingly, infection apparently has not been a problem in cases reported.

Summary

Most patients with this problem are seen by pediatricians, ophthalmologists and generalists, many of whom are not aware of the possibility of such trauma or the nature of the foreign body. It seems desirable, in view of the potentials involved, to re-emphasize the following points:

1. Golf balls can explode when cut and may, by pressure, produce significant injury even without obvious discernible lesions.

2. Liquid center balls are largely composed of relatively inert material which may be radiopaque.

3. X-rays are mandatory for effective treatment and legal protection.

4. School nurses, hygiene instructors and primary teachers should be made aware of this problem.

5. Treatment is removal by appropriate means. Parents can usually be reassured regarding long term good prognosis. •

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Hamartoma of the liver

A case report

John Jensen Corbett, MD, Casper

BENIGN TUMORS OF THE LIVER are rare. They may arise from hepatic parenchymal cells, bile duct epithelium, mesodermal structures, or from any combination of these tissues. Occasionally, benign tumors are found in the liver composed of derivatives of primitive germ layers that are not a part of the normal development of the organ, such as bone, muscle, or cartilage. These tumors are referred to as teratomas. To better understand the origin of benign tumors, it is necessary to recall that the liver arises as an entodermal anlage from a ventral out-pouching of the primitive foregut and that a mass of mesoblastic tissue caudal to the heart is invaded by the primitive entodermal cells. Because primitive mesenchyme is present in the early growth of the embryo, tumors made up of cells representing different types of tissues that arose from the primitive mesenchyme may develop later in life. This premise is the basis for development of nearly all benign tumors of the liver.

One of the most comprehensive and satisfactory classifications of benign tumors of the liver is that of Hensen, Gray, and Dockerty[1] and is as follows:

1. Parenchymal tumors
   a. Hepatic cell adenomas
   b. Bile duct adenomas
   c. Mixed hepatic cell and bile duct adenomas (cholangiohepatoadenomas, hamartoma)
2. Vascular tumors
   a. Hemangiomas
   b. Lymphangiomas
3. Miscellaneous
   a. Fibromas
   b. Lipomas
   c. Leiomyomas
   d. Tertomas
   e. Adrenal rests

A review[2] of all surgical specimens examined at the Mayo Clinic between 1907 and 1954 disclosed only thirteen benign adenomas including four hepatoadenomas, seven cholangiomas and two cholangiohepatoadenomas, or hamartomas. Gross[3] reported from Children's Hospital in Boston, a total of eighteen patients with tumors of the liver in the material examined up until 1953. Of these, only two were reported as hamartomas. Gross also cites reports by Patten[4] in 1948, and by Benson and Penberthy[5] in 1942, of successful removal of hamartomas from the liver in children. It was suggested in 1935, by McRae[6], that it is possible for hamartoma to occur in a malignant form. However, Singleton,[7] in a discussion of this paper postulated that this was a primary malignant adenoma of the liver. A further review of the world literature[8-17] through June of 1965 revealed an addition of only nine more cases, four of which do not fit the criteria of Henson, Gray and Dockerty for classification as true hamartomas.

CASE REPORT

V. J. H., a white male, was born March 15, 1964, weighed seven pounds thirteen ounces, and was a product of a full term pregnancy. No abnormalities were noted at time of delivery or in the immediate postpartum. Further hospital admissions at one and eleven months of age revealed no abdominal masses or other abnormalities other than upper respiratory infections. He was admitted to the hospital again on August 2, 1965 at seventeen months of age, at which time the parents reported increasing abdominal distention over the prior three months.

On physical examination, the patient had a large distended abdomen with dilated veins over the surface. A mass was described as being firm, but without a definite edge. Intravenous pyelograms revealed a poorly defined, large, soft tissue mass obscuring soft tissue detail and without calcification. The kidneys were found to be normal in position, with no distortion of the collecting system of either. Examination of the upper gastrointestinal

tract revealed that the stomach was displaced superiorly, the duodenum compressed, loops of the jejunum were displaced toward the left, ileum was displaced into the true pelvis, and the right colon was displaced toward the right (Fig. 1).

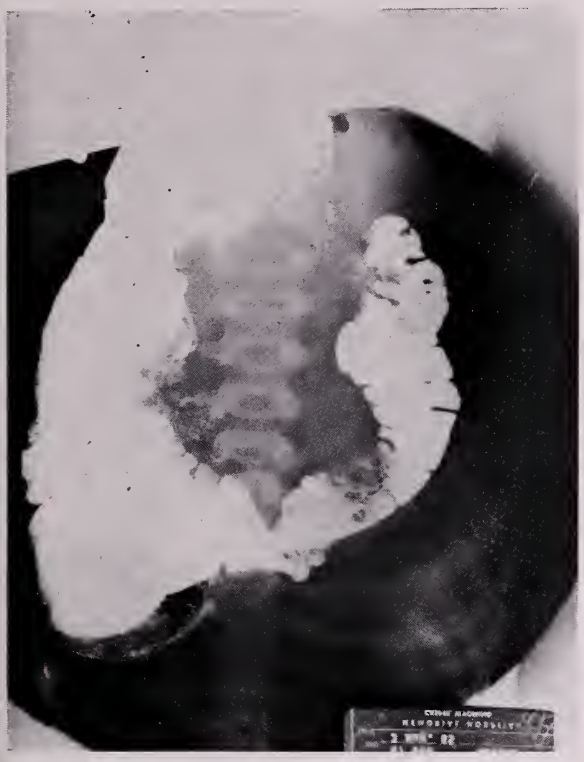

Fig. 1. Upper G.I. series showing displacement of right colon by tumor of liver.

He was operated ten days after admission. Following induction of anesthesia, there was a cardiac arrest. Resuscitation was carried out by the open chest technic, at which time cardiac standstill was noted. He responded readily and well. The chest was closed and the operative procedure terminated. After his electrocardiogram had returned to normal and the lung fully expanded, thoracotomy tubes were removed and surgery was rescheduled. Sixteen days after admission, at operation a massive hamartoma was removed from its attachment to the lower margin of the right lobe of the liver. His course was uneventful, and he was discharged from the hospital one week postoperatively.

The gross specimen (Fig. 2) was a round, soft tissue mass 9x15x20 cm., weighing 1,410 grams. The external surface was pink and covered by a smooth membrane except for its attachment to the under surface of the liver. The central portion of the mass (Fig. 3) contained multiple, irregular, cystic areas filled with a yellowish mucoid material. The surface was represented by a firmer rind of brownish tissue varying from 5 to 15 millimeters in thickness.

On microscopic examination (Fig. 4), the tissues were variable. In some areas there were essentially normal pieces of liver with quite well outlined

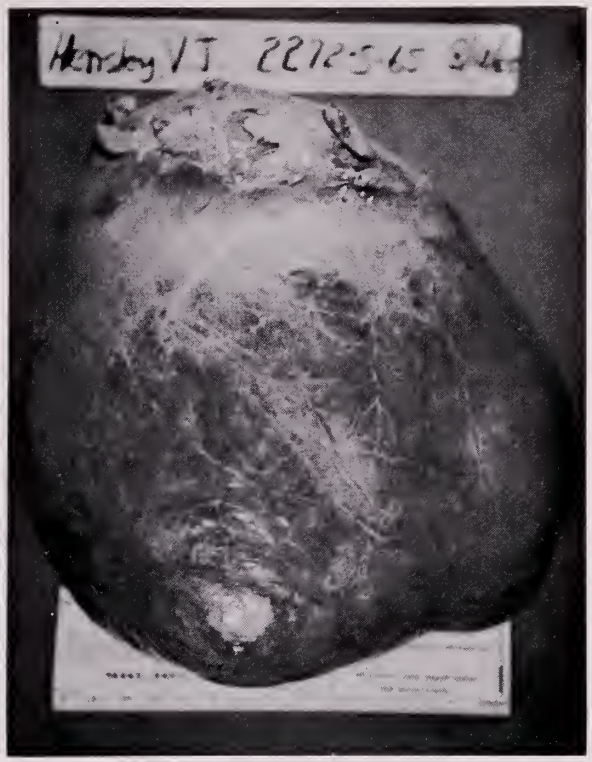

Fig. 2. Photograph of gross specimen of hamartoma of liver.

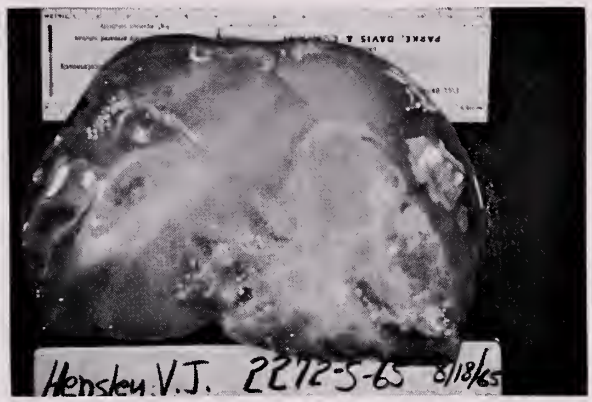

Fig. 3. Photograph of cut surface of hamartoma of liver.

lobules containing normal cord cells. These were embedded in the stroma of fibrous tissue which in many areas was extremely edematous. Cyst like spaces were present, lined by a thin, flat layer of epithelial cells. These cysts were filled with thick, mucoid, non-cellular material. In some places there were nests of proliferated bile ducts, which were quite irregular in shape. There was no unusual mitotic activity and no evidence of malignancy. The diagnosis of our pathologist was hamartoma of the liver.

Discussion

In 1904 Albrecht introduced the term hamartoma to designate a tumor-like malformation containing an abnormal mixture of

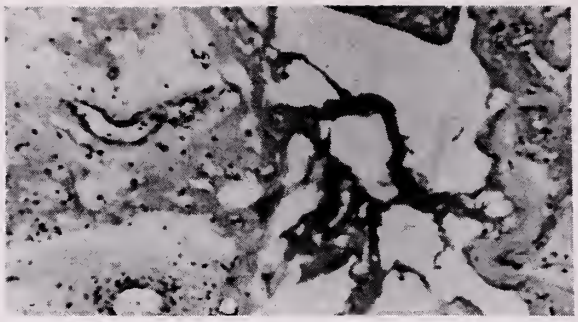

Fig. 4. Photomicrograph of hamartoma of liver.

normal constituency of an organ, whether it be in amount, arrangement, or degree of maturation, or in all of these respects. Hamartomas of the liver are thought to be true congenital aberrations of growth and are found more frequently in children than adults. The case herein described fulfills the requirements of Henson, Gray and Dockerty for a cholangiohepatoadenoma and is thought to fulfill the criteria of hamartomas as described by Albrecht. The age of the patient, the large size of the tumor, the continued growth, and the remarkably hyperplastic fibrous tissue tend to favor the view that this is a true hamartoma. The fibrous tissue in the tumor is not a condensation of the hepatic elements as seen in regenerative nodules, but consists of broad bands and islands of hyperplastic connective tissues surrounding and distorting the proliferating bile ducts and liver cells.

Experience with this tumor type is limited, but because of progression in size, growth potential with the possibility of malignant transformation and the danger of hemorrhage or twisting on its pedicle, it is believed that such lesions should be excised. The induction of anesthesia in patients with large intra-abdominal masses, which could conceivably reduce the respiratory volume, should be done with care and with the patient intubated, if at all possible, to insure adequate oxygenation. Although not proved in this case, the cardiac arrest was probably secondary to anoxia, and anoxia probably resulted from relaxation and inadequate oxygenation. Fortunately the anesthetist recognized the arrest immediately, and the child recovered without residuae from the unpleaesant experience, other than a well healed thoractomy incision.

Summary

Cholangiohepatoadenomas or hamartomas of the liver are rare, mixed tumors originating from both hepatic cells and bile ducts and show pronounced hyperplasia of the connective tissue elements. They occur more frequently in infants and children than in adults, and they grow to a large size. They may be cystic or solid, usually are found in the right lobe or attached to it, and should be excised if possible. A single case is reported. •

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The red blood cell and the lung

Frank W. Laird, MD, Cheyenne

Brief but technical review and discussion of transport of oxygen and carbon dioxide.

THE FUNCTION of the red blood cell is oxygen and carbon dioxide transport. Under extreme hyperbaric oxygen tensions enough oxygen can be supplied to keep oxidative enzymes supplied without the red cell being present, but without the red blood cell carbon dioxide transport is seriously inefficient, resulting in acidosis and loss of buffering capacity.

Hemoglobin, the main constituent of the red cell, is a substance containing four heme molecules, heme being a ferrous iron-containing porphyrin, and four globin molecules, globin being a protein consisting of thirty-three molecules of histadine (No. III graph sheet). It is the imidazole portion of histadine that plays such a vital role in carbon dioxide transport (18 on reference sheet) since it is this radical that accepts the excess hydrogen ion formed at the tissue level when carbon dioxide is converted to hydrogen ion and bicarbonate ion (9, 10 and 11 reference sheet) for transport to the lung.

In normal adult males there are 25 trillion red cells representing 750 grams of hemoglobin. Twenty-five grams of hemoglobin are formed in the ribs and vertebrae daily and destroyed in the reticulo-endothelial system, mainly the spleen, releasing 100 milligrams of iron. Of this amount approximately 90 milligrams are reabsorbed and 10 are lost. Five hundred cubic centimeters of bile pigments are produced.

Three-tenths per cent of weight of the hemoglobin is iron. At the atomic weight of 56 the weight of hemoglobin must be 300 times 56 or 16,800. Svedberg's ultra centrifuge gauged the weight at 67,000, meaning that there are four atoms of iron and four globins in association.

Each of the four irons has its own dissociation constant. K_1, K_2, and K_3 are similar; K_4, however, is 20 times greater, giving the oxyhemoglobin dissociation curve its physiologically invaluable curve (see No. II graph sheet).

Oxidizing hemoglobin to ferric iron using potassium ferricyanide forms methemoglobin which causes oxygen to be held tightly to the iron. Low oxygen tensions such as occurs in the tissues needing oxygen will not result in release of oxygen to the oxygen-starved tissue, leading to the death of organism even though oxygen saturation of the hemoglobin is high. Carbon monoxide has an affinity for the iron in hemoglobin which is 200 times greater than oxygen, accounting for the fact that .1 per cent carbon monoxide in air will compete equally with oxygen.

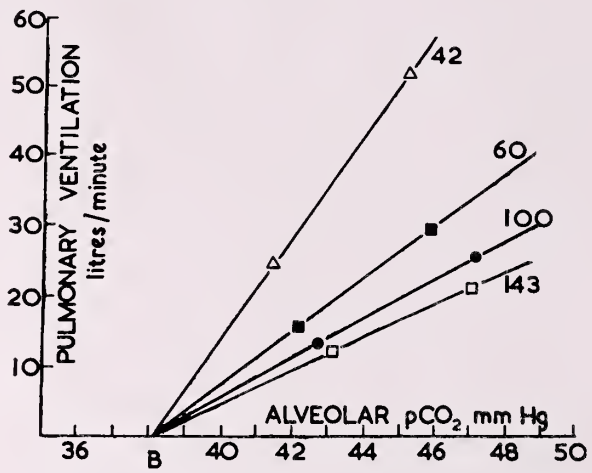
If hemoglobin was dissolved directly in plasma rather than being enclosed in the red blood cell, (1) viscosity would be increased to an intolerable level, (2) the osmotic pressure would be increased to approximately 125 mm. of mercury instead of the normal 25 mm. of mercury, deranging the mechanism of water interchange between capillaries and tissue spaces, and (3) free hemoglobin is excreted by the kidneys.

In healthy people at sea level hemoglobin is 97 per cent saturated (1, 2, 4, 5, 6 reference sheet). Completely saturated hemoglobin can carry 1.34 cc. of oxygen per gram, requiring an arterial oxygen tension of 140 mm. of mercury at 37° C. at pH 7.4 (see II graph sheet). In Denver, Colorado, the alveolar oxygen tension is 82 mm. Hg (630 mm. Hg-47 mm. Hg water vapor pressure, the pressure in the body as long as the temperature is 37° C= 583 × 21%=122 mm. Hg — 40 mm. Hg alveolar CO_2 tension (see 3 reference sheet). Looking at the dissociation curve one can see that the saturation is about 94 per cent at normal pH and temperature. At high alti-

tudes man compensates for lower oxygen tension by (1) increasing oxygen carrying capacity, and by (2) increasing the number of oxygen molecules in the lung per minute by increasing ventilation. In Morococha, Peru (14,900 ft.), the natives' hemoglobin averages 20 grams per cent, the red cell is larger, total hemoglobin per kilogram being increased from 13 grams to 20 grams; arterial oxygen content is increased from 21 cc. per 100 cc. of blood to 23 cc. (see 5 reference sheet) despite the drop in ambient oxygen tension from 150 mm. Hg to 83 mm. Hg, the latter yielding arterial oxygen tensions of 53 mm. Hg, a saturation of 82 per cent (see II graph). In the native the cardiac output is paradoxically lower than that of the normal sea level inhabitant.

Oxygen extraction rate by the tissues depends on the amount of work the tissue is doing, the pH, and the temperature of the tissue. At high hydrogen ion concentrations and high temperatures, oxygen dissociates from hemoglobin at greater than normal rates (II graph sheet). Body oxygen extraction is measured by total oxygen uptake per minute. Highly trained athletes can increase uptake from normal 250 cc. to 4,000 cc. per minute to 6,000 cc. on oxygen. In such instances the arteriovenous oxygen difference in content may increase from normal of 4 cc. to 18 cc. per 100 cc. of blood. By applying the Fick principle the cardiac output increases from normal, 5,000 cc. per minute (250 cc. oxygen uptake per minute divided by 5 cc. arterio-venous difference), to 33,000 cc. per minute (6,000 cc. of oxygen uptake per minute divided by 18 cc. arteriovenous difference in

GRAPH I

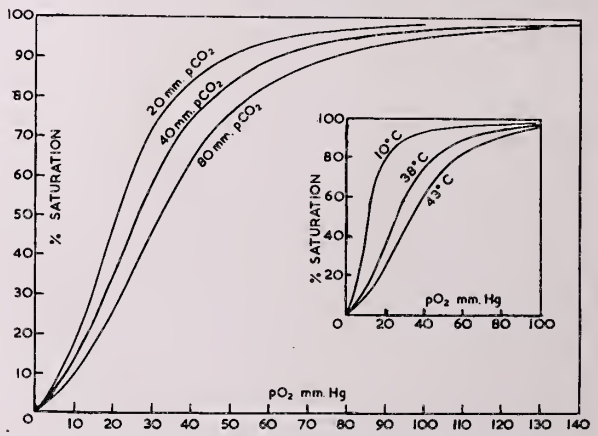


At 100 mm. Hg O_2 tension (alveolar) increasing PCO_2 from normal (40) to 50 mm. Hg increases ventilation from 5 L/min. to 30 L/min.

At 60 mm. Hg O_2 tension (35% saturation) increasing PCO_2 from 40 to 50 increases ventilation from 5 to 40 l.

This graph shows the importance of O_2 tension on ventilatory response to CO_2 tension.

GRAPH II



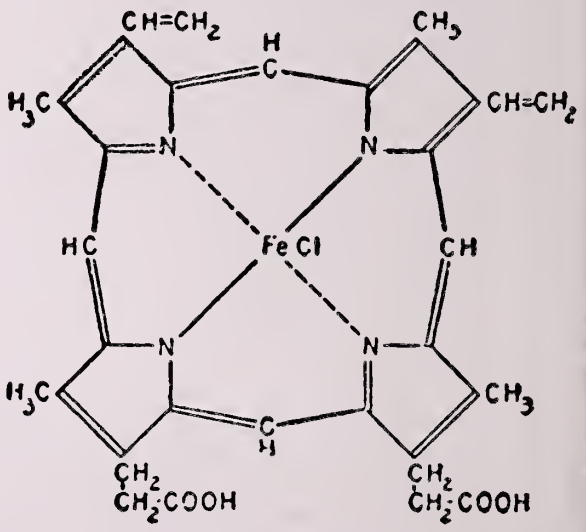
Oxyhemoglobin dissociation curve showing the great importance of PH and temperature on dissociation.

In acidosis as represented by 80 mm. Hg PCO_2 Hgb is 75% saturated at PO_2 of 50 mm. Hg whereas Hgb is 80% saturated at PO_2 of 50 mm. Hg at 40 mm. Hg PCO_2.

In alkalosis represented by PCO_2 20 mm. Hg Hgb sat. is 90% saturated at PO_2 of 50 mm. Hg.

The graph shows that Hgb is 100% saturated at PH 7.4 at O_2 tension of 140 mm. Hg.

GRAPH III



Hemin

Haem nucleus showing ferrous iron in the porphyrin ring which is made up of pyrrole portions.

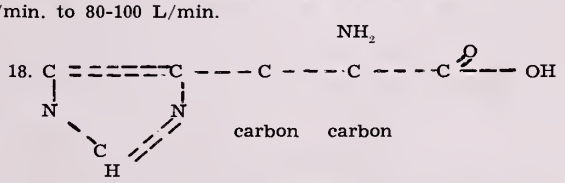
content). Total ventilation necessary to accomplish such tremendous changes requires increases from the normal of 4 to 5 liters per minute to 80-90 liters per minute (see 13, 14, 15, 16 reference sheet).

The lung area available for diffusion is approximately 50 square meters, 40 times greater than external body surface. At any particular time 75 cc. of blood is in the pulmonary capillaries where diffusion occurs. Red cells traverse the capillary of the lung in about one-half second. Conversion of reduced hemoglobin to oxyhemoglobin requires one hundredth second at normal temperature and pH, conversion of oxyhemoglobin to reduced requiring a similar time.

To appreciate the importance of hemoglobin in oxygen transport, consider the fact that without hemoglobin alveolar oxygen tensions in the neighborhood of 1,670 mm. Hg are necessary in order to have 5 cc. of oxygen available, the amount necessary to maintain health at rest. Only 0.3 cc. of oxygen dissolves in plasma per 100 mm. Hg arterial oxygen tension (.3 cc. O_2/100 mm. Hg $\times$ 1,670 mm. Hg=5 cc.). Arterial oxygen tension and alveolar oxygen tensions are similar only in good health. Alveolar-arterial differences of as much as 300 mm. Hg can occur under anesthesia when the patient is getting 90-100 per cent oxygen, indicating extensive arteriovenous shunting probably due to atelectasis of miliary type. On air the pressure necessary to have an alveolar oxygen tension of 1,670, air pressure of about eleven atmospheres is required. With 15 grams of hemoglobin at 100 mm. Hg alveolar oxygen tension the oxygen content is 20 cc./100 cc. blood.

At resting tissue level oxygen tension is low (35 mm. Hg) and CO_2 tension is high (48 mm. Hg), pH is slightly low and temperature is slightly high. All of these factors encourage oxyhemoglobin to give up oxygen being held at the arterial oxygen tension of 100 mm. Hg at sea level (II graph). Reduced hemoglobin is formed which has a high affinity for hydrogen ion. Carbon dioxide, the tension being high in the tissue cells, diffuses to the capillary where the tension is relatively lower (40 mm. Hg), entering the red blood cell where carbon dioxide plus water in the presence of carbonic anhydrase rapidly forms carbonic acid, an unstable compound dissociating to bicarbonate ion and hydrogen ion, the latter being rapidly removed by the imidozole portion (18 reference sheet) of the histadine, the primary alpha aminoacid of globin (9, 10, 11 reference sheet). With removal of hydrogen ion the mass action effect

REFERENCE SHEET

1. Barometric pressure at sea level = 760 mm Hg; B.P. at Denver = 630; B.P. Cheyenne 610 mm Hg (average); alveolar O_2 tension at Cheyenne = 610—47 mm Hg water vapor pressure, a constant figure as long as the body temperature remains at 37° C, regardless of altitude or barometric pressure = 563 mm Hg $\times$ 21% = 118 mm Hg — 40 mm Hg CO_2 tension in lung = 78 mm Hg alveolar O_2 tension = 94% saturation of arterial blood assuming that no gradient exists between the alveolus and end pulmonary capillary blood. This is a valid assumption only in awake, healthy persons.
2. Ambient O_2 tension sea level = 159 mm Hg.
3. CO_2 tension, arterial and alveolar at sea level in good health=40 mm Hg CO_2 tension, venous=47 mm Hg at rest; CO_2 tension varies with ambient pressures because of hyperventilation at higher altitudes.
4. Arterial O_2 tension, sea level = 100 mm Hg; at Cheyenne = 78 mm Hg.
5. Arterial O_2 content, sea level = 20.3 cc (97% $\times$ 1.34 cc O_2/gm Hgb $\times$ $\frac{15 \text{ gm}}{100 \text{ cc}}$ + $\frac{.3 \text{ cc dissolved } O_2}{100 \text{ mm Hg } O_2 \text{ tension}}$
6. Venous O_2 content = 15 cc (75% $\times$ 1.34 $\times$ 15 gm + .1 cc dissolved O_2 in plasma) / 35 mm O_2 in tension
7. Arterial saturation of Hgb = 97% at 100 mm Hg O_2 tension at pH 7.4 at 37° C.
8. Venous saturation of Hgb = 75% at 35 mm Hg O_2 tension at pH 7.4 at 37°C at rest.
9. $CO_2 + H_2O \xrightarrow[\text{Anhydrase}]{\text{Carbonic}} H_2CO_3 \longrightarrow H^+ + HCO_3^-$
10. 5 milliequivalents of H^+ in 1 Liter of water drops pH from 7.0 to 2.3 (.005 eq. or 5 $\times$ 10^{-3} eq. pH = -log (H+) = -(.7 -3) = 2.3)
11. 5 meq. H-/L of hgb drops pH from 7.4 to 7.2 attesting to efficacy of the imidazole portion of histadine to take up H^+.
12. HCO_3^- concentration (HCO_3^-) = 26-28 meq/L.
13. Surface area of lung = 50 $Meters^2$ (approximately 40 $\times$ body surface area).
14. Arterio-venous O_2 difference = 5 cc at rest. During violent exercise A-V difference may be 15 cc-18 cc.
15. Highly trained athletes can increase cardiac output 5 to 7 times from 5 L/min. at rest to 35 L/min. on air and O_2 respectively.
16. Highly trained athletes can increase oxygen consumption from 250 cc/min. at rest to 4-6.5 L/min. on air and O_2 respectively.
17. Ventilation increases in severe exercise from 4-5 L/min. to 80-100 L/min.
18. 

Histadine
(alpha amino, Beta imidazole propionic acid)
19. Henderson-Hasselbalch Equation

$$PH = PK + \text{Log} \frac{(HCO_3^-)}{(H_2CO_3)}$$

$$7.4 = 6.095 + \text{Log} \frac{26 \text{ meq}}{1.3 \text{ meq}}$$

at a ratio of 20:1 the PH remains constant at 37° C. The pK changes with temperature and pH.

is to move the equation to the right forming more hydrogen ion and bicarbonate ion. As bicarbonate builds up in the red cell it diffuses to the plasma, chloride ion shifting to the red cell to maintain anionic equilibrium—the Hamburger or chloride shift. The carbon dioxide-bicarbonate pair forms the most important buffer system of the body and hemoglobin is an essential part of it.

The venous blood moves to the lungs with oxygen tension low, 35 mm. Hg, and carbon dioxide tension high, 47 mm. Hg, relative to the situation in the lung. The alveolar oxygen tension of 100 mm. Hg causes the oxygen molecules to diffuse to the capillary changing reduced hemoglobin to oxyhemoglobin. Oxyhemoglobin is a weaker base than reduced hemoglobin causing hydrogen ion to be released from the imidazole portion. The small amount of dissolved carbon dioxide in the pulmonary capillary diffuses to the alveolus where the carbon dioxide pressure is lower, upsetting the ratio of CO_2 to HCO_3^- of 1:20 (19 reference sheet). Hydrogen ion being available from the oxygenation of hemoglobin reacts with bicarbonate to form carbonic acid changing in the presence of carbonic anhydrase (9 reference sheet) to carbondioxide and water. The loss of the CO_2 has the mass action effect of moving the equation to the left, forming more carbon dioxide and water. As bicarbonate moves into the cell the chloride ion moves to the plasma, again keeping the anionic concentration constant. Carbamino hemoglobin accounts for 20 per cent of carbon dioxide transport in the resting adult. This is formed by carbon dioxide attaching directly to the alpha amino radical of histadine. In heavy exercise it is believed that perhaps 50 to 80 per cent of the carbon dioxide is transported in this way, since the chloride shift method requires approximately ten times longer. •

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Carotid angiography*

Claude O. Grizzle, MD, Cheyenne

General aspects of carotid angiography of interest to those not intimately involved.

IN GENERAL, most of us are actively engaged in the preventive as well as the direct treatment of many disease conditions. Many of our diagnostic facilities are not particularly strenuous on the patient, nor time consuming, nor even hazardous. As regards carotid angiography, this may not be so. Certainly, in diagnosis, as an aid to direct attack on such conditions as brain tumor, intracranial bleeding with trauma or stroke, or intracranial vascular malformations, the time and effort expended, and the risks involved, are minimal factors in relation to the value of the information gained and the magnitude of the clinical problems. Indeed, for intracranial aneurysms and vascular malformations, angiography is the only really reliable diagnostic adjunct to provide a plan for effective neurosurgical treatment. In preventive medicine in which angiography is employed to diagnose early or existent occlusive or stenotic disease of the extra and intracranial vasculature, the risks of this procedure are a good deal higher. We should be aware of these risks when evaluating any patient or upon referring any patient for this diagnostic procedure. Although we should have clear indication before employing this procedure, it is important to recognize that this is a good and valuable procedure.

We use Hypaque sodium (50%), but could

*Presented at the Winter Seminar, Wyoming State Medical Society, March 17, 1967.

just as well use Renografin (60%), via percutaneous placement of the needles under general endotrachial anesthesia. Some patients without general anesthesia have experienced enough discomfort from the burning sensation of the dye injection and placement of the needles that they have refused follow-up studies later when they were indicated. In addition, with this anesthesia convulsions are controlled, and I believe we can keep the patient better oxygenated. Under these conditions the arterial phase lasts on the average of 1.5 seconds, the capillary phase lasts between 0.5 and 1.0 seconds and the venous phase lasts about 4.0-5.0 seconds. The internal carotid circulation is about twice as fast as the external carotid circulation, hence, we inject the common carotid and obtain visualization of the internal cerebral circulation before the external circulation obscures it. The circulation time is influenced by such things as increased intracranial pressure, local slowing about mass lesions, or vascular tumors may speed it via A-V shunting. Intracranial hypotension slows the capillary phase in about half of the cases. Up to 60 years of age there seems to be no difference in the circulation time of the brain, but after that age slowing is felt to be due to arteriosclerosis. With marked increased intracranial pressure, filling of the distal internal carotid may be prevented.

Let us now consider some of the risks and complications of this procedure. The minor complications include those inherent to the procedure, such as, local neck pain and swelling, elevation of temperature and headache, and occasional local hematomas, petechiae in the distribution of the external carotid artery, vomiting, transient dilation of a pupil, transitory recurrent laryngeal nerve paresis from direct or indirect injury, and rarely convulsions. The true complications involve the central nervous system in the form of hemiparesis, aphasia, unilateral sensory disturbance and hemiplegia. Death per se is rare, and when it occurs is usually due to the disease process itself. It is rare to have a true complication arise from the procedure after 2 to 3 hours from the time of the test. The incidence of complications ranges between 0.2 and 4.5 per cent, but may be higher depending upon the experience of the angiographer, the care with which the needles are inserted and the judgment exercised in the selection of appropriate patients for the procedure. In short, the type of contrast substance used has little effect on the incidence of complications. On the contrary, the amount of trauma in inserting the needles, the frequency of injections and the amount of contrast material are factors which influence the complication rate. For Hypaque, the maximum amount should not exceed 50 cc. for both sides at one setting. It should be noted that the incidence of complications in patients with carotid thrombosis is higher than with other conditions. Vertebral angiography is more difficult and has more complications than carotid angiography, particularly in the form of brachial neuritis, possible damage to the spinal cord, and pneumothorax, when the retrograde subclavian approach is used. Technical complications include subintimal or intramural injections which may mimic thrombosis, and sub-adventitial injections may lead to respiratory difficulties from prevertebral swelling.

Cerebral angiography is employed to accomplish several goals: (1) to visualize the origin of intracranial bleeding, (2) to note the position of arteries and veins and to identify any changes in their location produced by mass lesions as tumors, abscesses, hematomas or by enlarged ventricles, (3) to visualize congenital vascular malformations or new vessel formations within tumors, and (4) to determine if there is vascular disease which may alter cerebral blood flow, such as arteriosclerosis arteritis, thrombosis, or spasm.

There are no absolute contra-indications to cerebral angiography. However, we should be cautious in the face of (1) severe hypertension, (2) poor clinical state of the patient, (3) severe arteriosclerosis. In such cases we should use other diagnostic technics such as brain scanning or echo encephalography, if equivalent information can be obtained by them with less risk.

The remainder of this discussion is a potpourri of interesting facts related to use of carotid angiography. About 54 per cent of intracranial aneurysms are demonstrated in

initial bilateral carotid angiograms. More aneurysms are demonstrated when the studies are done in the second week after hemorrhage rather than in the first six days after hemorrhage. False negative diagnoses occur in about 3.8 per cent of initial studies for aneurysms located on the anterior portion of the Circle of Willis. Multiple aneurysms occur 19 per cent of the time. A clear cut relationship has not been established for two, three or four vessel studies and diagnosis of aneurysm. However, a relatively small number of posterior circulation (basi-vertebral) aneurysms are detected by four vessel studies. We prefer direct carotid angiography combined with retrograde subclavian angiography to demonstrate the vertebrals and basilar arteries.

Occlusive and stenotic lesions lend themselves to study by cerebral angiography. Before a stenotic lesion becomes symptomatic per se its flow needs to be reduced to 90 per cent or less. A clinical test is to cautiously compress the opposite carotid and if the patient starts to become symptomatic, he becomes a candidate for angiography and surgery. Only about 10 per cent of individuals are really helped by extra-cranial endarterectomy. Completed stroke is seldom if ever helped by endarterectomy as the damage is fixed by the time the condition is recognized. Prevention of additional stroke from recurrent platelet emboli is another matter, which endarterectomy may help. In routine autopsy studies of patients without neurologic symptoms prior to death, it is interesting that 22 per cent of them have stenotic extra-cranial lesions greater than 50 per cent of the lumenal size, and about 4 per cent have complete occlusion of one vessel.

Some of the questions that come to mind about cerebral angiography have been briefly reviewed. The focus has been on the complications of this procedure and the scope of the indications for it. This report has been aimed at refinement of the procedure without criticism, because it is a good one when properly used. •

Giant parathyroid adenoma

Dan B. Greer, MD, Cheyenne

Case presentation

MOST PARATHYROID TUMORS are not palpable, cause vague symptoms and are only diagnosed on a high degree of suspicion with subsequent finding of high blood serum calcium levels. The symptoms of hypercalcemia with anorexia, nausea, fatigue, weakness, constipation, increased water intake and occasional nocturia are not always definite or pronounced enough to arouse suspicion. Often these patients will seek help from multiple physicians over a long period of time before the true disease entity is known.

The most valuable diagnostic test is the serum calcium in a laboratory where the upper limits of normal are well established. Other screening procedures such as angiograms, scanning with Sc^{75} selenomethionine[1] have been used, proved of some value, but in general are not accurate enough to be of definite help.

Hypercalcemia is also present in parathyroid hyperplasia due to renal insufficiency, but these are usually the patients without kidney stones as contrasted to the adenoma patient who most often has renal calculi.[2] Hypercalcemia has also been reported in association with myxedema. Pregnant mothers may show evidence of hyperparathyroidism and should be explored for a tumor as the incidence of complications of pregnancy and fetal morbidity and mortality

is increased over the expected normal. However, a mother may not show symptoms for years after the birth of her child, but these children have tetany after birth, usually within a few days, and often after being fed cow's milk. The tetany in the newborn,[3] in fact, may be the only clue to the mother's adenoma and investigation should be made. Again, a high index of suspicion must always be present.

Cysts may be palpable and thought to be thyroid nodules. Most cysts do not function, but five cases have been reported as so-called functioning cysts associated with primary hyperparathyroidism.[4] All of these factors point to the fact that these are often difficult lesions to detect.

Here is reported a case to emphasize some of these points. The pertinent data will be presented:

CASE REPORT

M. W., 54-year-old white female, was seen for her present illness in July, 1966, because of slight difficulty in swallowing which seemed to be increasing in severity. She had x-ray evidence of a substernal mass, thought to be thyroid. At this time she had no evidence of hyperparathyroidism nor any of hyperthyroidism. Past history, however, was most significant. She had gross hematuria in December, 1957, which was from the left side by cystoscopy. A serum calcium was 12.9 and 12.7 mgs% and a phosphorus was 3.9 and 3.2 mgs%. Other laboratory work was normal. She gave a history at that time of having had previous renal calculus involving both kidneys; these records were not available and have not been found. She underwent a nephrolithotomy in January, 1958. At that time she showed moderate deviation of the trachea indicative of a probable thyroid mass (Fig. 1).

Fig. 1.

The patient had left renal stones again in May, 1959, and had a nephrectomy with multiple renal calculi being found. A blood calcium was not done during that admission.

In February, 1963, she had a small stone in the right excretory system and this was removed with a right ureterolithotomy. The chest x-ray on this admission revealed that the mass was larger than in 1958. Since the hospitalization in 1963 until this illness the patient had no further difficulty relative to the excretory system, or any other particular symptoms. X-ray evidence of growth of the substernal mass over a period of years to the present illness shows in Fig. 2.

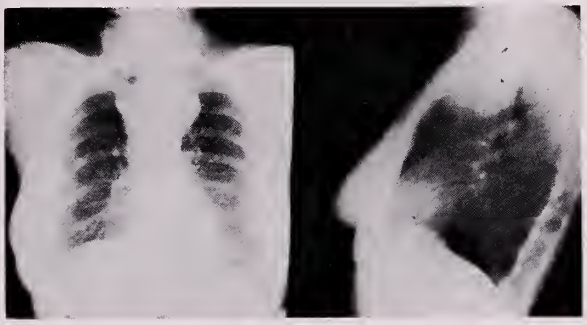

Fig. 2

She was operated upon in August, 1966, with a preoperative diagnosis of non-functioning thyroid mass. This was exposed through a thyroid incision extended as an inverted T with splitting of the sternum to the second interspace, then turning the upper ribs and sternum as a flap on the left side. This exposed the mass very well which proved to be even larger than suspected on x-ray. A diagnosis could not be made by frozen section although it was thought to be a benign lesion. The mass was removed along with some mediastinal lymph nodes and is shown in Fig. 3. The final sections showed the tumor removed represented a cystic parathyroid adenoma. The tumor measured 8 cm. in diameter. The patient made an uneventful recovery and has had no further symptoms. Subsequent bone survey, blood

Fig. 3.

calcium, and phosphorus have all been within normal limits.

Perhaps this presentation will stimulate more interest and arouse more suspicion in this problem. •

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Discussion by James R. Wheeler, MD, Greeley, Colorado: I can sympathize with Dr. Greer's surprise on finding that this was a parathyroid adenoma. A similar situation existed for us, in that we had not seen any parathyroid adenoma until two and a half years ago, and now suddenly we have seven proved cases.

This emphasizes my first point. The finding of seven cases coincides with the time interval that we have had accurate reproducible calcium determinations in our laboratory. Two and a half years ago, we started using a relatively simple method based on the use of ultra-violet light, which can be done easily in any hospital. It has achieved such reliability that we feel any patient with a serum calcium level of over 10.5 mgm% deserves a work-up for hyperparathyroidism. This is demonstrated by a distinct parathyroid adenoma measuring 2 mm. in diameter. This man had a history of a kidney stone and a serum calcium determination of 10.7 mgm% on two occasions. The rest of his work-up then confirmed hyperparathyroidism. Since surgery, his serum calcium level has remained within normal limits.

After finding an elevated serum calcium, our work-up has consisted of a low calcium diet for three days so that we can demonstrate more than 200 mgm% of calcium in the final 24-hour urine specimen. Then creatinine clearance along with the phosphorus clearance has been determined and from these two values we have calculated the precentage of Total Phosphorus Reabsorption (Clinical Interpretation of Lab Tests, R. H. Goodale, 5th Edition, F. A. Davis, Philadelphia) and the Urinary Phosphate Excretion Index (Biochemistry of Clinical Medicine, W. S. Hoffman, 3rd Edition, Yearbook Publication). In five of the seven patients with positive results there has been no suggestion of a mass in the neck when examined by several examiners, but in all cases an adenoma measuring up to 1.5 cm. in diameter has been discovered.

This brings up my second point: In our experience since most of these are not palpable, it therefore requires a high degree of suspicion to make the initial investigation. I am sure that all of you are aware of the vague symptoms referable to the gastrointestinal system, the painful joints, the sore muscles and mental aberrations that these patients have. These are the very things that cause them to jump from physician to physician and earn the epitaph of "crock." Yet, believe me, these crocks are among the most thankful patients when you cure them.

The third point is that the determination of the composition of kidney stones may mislead you into believing that the patient does not have a parathyroid adenoma. Remember that a kidney stone may have a nidus of calcium phosphate and the rest of the stone is composed of non-diagnostic chemicals. We feel that any patient with kidney stones should have a serum calcium determination.

Finally, I wish to reiterate that discovery of parathyroid adenomas will be dependent upon an accurate serum calcium determination and maintenance of a high degree of suspicion. •

MONTANA

89th Annual Meeting

The 1967 annual meeting of MMA will be held in Missoula, September 14-16. The Florence Hotel will serve as convention headquarters and all of the social functions will be scheduled at it. The scientific and business sessions will be held in the Lodge on the campus of the University of Montana; commercial and scientific exhibits will be displayed in this building in an area adjacent to the meeting room. Complete your plans NOW to attend the 89th Annual Meeting.

* * * *

Physicians in the News

Allan L. Goulding, M.D., Billings, has been appointed by Governor Babcock to represent the MMA upon the Advisory Council of the State Department of Public Welfare. . . . R. E. Lemire, M.D., Billings, has been named president-elect of the Montana Heart Association. Doctor Lemire will succeed Hollis K. Lefever, M.D., Lewistown, upon the completion of his term as president. Leonard W. Etchart, M.D., Billings, was also elected to serve as a member of the Board of Directors of the heart association.

UTAH

Utah Editor, Rocky Mountain Medical Journal Report

The following report was submitted by the Editor, Utah Section, of the RMMJ to USMA's House of Delegates on March 22, was subsequently reviewed by the Reference Committee, and was approved by the House.

> After many years of faithful and excellent service to the Rocky Mountain Medical Journal, Dr. Richard P. Middleton has retired from his journalistic pursuits.
>
> The January issue of the Rocky Mountain Medical Journal was the first Utah issue and contained a wide variety of papers of scientific and historical interest by Utah authors. We were particularly pleased to have several papers from members of the faculty of the University of Utah Medical School. We will have such an issue from time to time.
>
> I firmly believe that the Rocky Mountain Medical Journal can serve a very definite need as a regional journal. I believe it should emphasize items of historical interest and consider it an excellent outlet for publications, particularly of case reports and of papers written by house staffs of the various hospitals. I would strongly urge members of the Association to submit papers that they would like to have published.
>
> Respectfully submitted,
> ALAN E. LINDSAY, M.D.
> Editor

ABSTRACTS OF SCIENTIFIC PAPERS

(To be presented by Utah physicians during the 72nd Annual Scientific Sessions of USMA, September 13 through 15, 1967.)

Complications in Permanent Electrical Pacing of the Heart

C. Hilmon Castle, M.D., and
H. V. Liddle, M.D., Salt Lake City

The effectiveness of electrical pacing of the heart in preventing Stokes-Adams attacks as well as providing long-term benefits for patients with A-V heart block has been established. The frequency and type of complications are related to the method used for permanent electrical pacing. The results and complications in 39 patients with direct epicardial electrodes (EE) are compared to those occurring in 40 patients with an implanted transvenous right ventricular endocardial catheter electrode (TVE).

Patients with EE had a 12 per cent mortality due to the procedure for implantation, 10 per cent electrode breakage, and high frequency of pacemaker failure (average pacemaker life 16 months) in contrast to patients with TVE, where there have been no deaths or electrode breakage and longer pacemaker life. Complications of dislodgement of catheter tip and failure to pace has occurred in 8 of 40 patients, and perforation of the right ventricle in 2 patients with TVE. For patients with TVE, the hospital stay duration was approximately one-half that required for EE. Infection has not occurred with either method when new sites have been prepared in the subcutaneous tissue for the power pack. In 12 patients in whom the old pouch was used for replacement with a new unit, infection has occurred in 7. All with pouch infection have required removal of the pacemaker for eradication of the infection.

In conclusion, the mortality and frequency and severity of complication are higher in patients who have been treated with epicardial electrodes as compared to patients with an RV endocardial electrode for electrical pacing of the heart. The TVE method for permanent pacing is preferred to the EE method in patients with Adams-Stokes Syndrome. In replacing old pacemaker units, new subcutaneous sites should be used in preference to the old site to minimize the possibility of infection.

Primary Prevention of Emotional Illness and the Schools

Merritt H. Egan, MD, Salt Lake City

There are strong environmental and/or functional forces that must be understood if we are to modify the emotional ills that beset our children. Only about one emotionally ill child of every hundred, who needs treatment, receives it. It is

impossible to begin to solve the problems of emotionally ill children unless a major portion of our energies is directed toward primary prevention through work with our basic cultural institutions — family, schools, medical profession, and the churches. When the family has difficulty accomplishing the desired results, schools must be our major second line of defense. Teachers are the only professionals with a relatively high numerical ratio to population who spend a great deal of time with children at an early age. With adequate training and medical supervision, they can make a major contribution towards solving and preventing our mental health problems. Some parents defy our best efforts to help them at present. One of our greatest primary preventive opportunities is to work with young children through the schools. In a short time, these children will be the parental pairs.

Schools must accept all children as they are—not exclude some of them. We must aid the schools to develop a program that will enable each child to reach the maximum of his abilities. There are a host of alternatives with better prospects for success than the dead-end course of expelling a child from school. We must help all children find a place in school where they can be a success. Neither we nor our children can afford to allow them to just drift into nothingness which is often compensated for by excelling in negativism. More time must be spent in our colleges of education giving teachers a greater understanding of children so that they are better able to handle the behavioral problems as well as the academic problems in the classroom. The cognitive and affective aspects of a child's life cannot be separated; hence, the educational and healing professions must work together. We can no longer think in terms of either a mental hospital, home, or school. Unless we move in the direction of primary prevention, there will continue to be almost 99 out of 100 children who need help but will not receive it. Next to mother and father, teachers are often the most important influence in the life of a child. To the disadvantaged child, they may be the strongest force. Helping a child be a success in school is an important part of treatment. It costs $4,000 in New York City to put a child through the juvenile court. The real cost in dollars of not properly educating 10 per cent of our maladjusted children may well equal the cost of educating the other 90 per cent.

We must overcome many obstacles such as: everyone desiring to be the coordinator; diagnosing and referring but never treating; pushing all children with problems out of the regular classroom or perhaps out of school; using the rationalization that we are not trained or it is someone else's job; speaking in jargon and making inappropriate suggestions; overcoming teachers' fears, resistances, inertia to change, and professional jealousies. If we accomplish these objectives, educators and physicians will be interdependent—adding their talents together for the benefit of children. Professional separation does not increase prestige. The more power we exert from one vantage point, the more total influence we will all have.

Some of the primary prevention alternatives that can be used in the schools are: mechanical aids to increase teaching and learning efficiency; development of special teachers for special problems; the big brother program; a volunteer or paid room assistant for each class; special attention to populations at special risk and children in developmental or accidental crises; working with key people such as school personnel; helping teachers use appropriately causal teaching, games, life-space interviews and school rules; a roving teacher who can offer on-the-spot consultation and help; teachers' groups, activity group therapy for latency-age children, discussion groups for junior and senior high school ages, and parents' groups; tel-a-teacher program, etc.

The schools have captive pupils (patients) and are our principal way of reaching many children who do not come to doctors or clinics but sometimes need help more than those who do. We must be physicians and educators—not just doctors and teachers.

Morphologic Changes in Bronchial Epithelium of Long-Term Cigarette Smokers (A cytological and histopathological study)

Cyril D. Fullmer, MD, Salt Lake City

In spite of the fact that the American Medical Association tabled the decision as to the question of whether cigarette smoking is harmful to man until further research can be performed, official voluntary and governmental organizations and committees have concluded from available evidence that cigarette smoking is the principal cause of lung cancer.

Carcinoma of the bronchus undoubtedly shares the biologic behavior described for carcinoma of the cervix to the extent that it requires a long and silent history of development before clinical manifestations of the disease are present.

The author will demonstrate examples of the cytological and histopathological abnormalities which develop in bronchial epithelium during long-term cigarette smoking. Cytologic examination of a series of sputa is an accurate technic for detection of bronchial atypism, dysplasia, and carcinoma of the lung in experienced hands. Cytology is capable of detecting bronchial cancer in the pre-clinical stages, and presents some unusual clinical problems for the physician, thoracic surgeon, and patient.

During the past five years we have detected malignant cells in 11 cases of long-term cigarette smokers, ages 56 through 71. All presented negative chest x-ray findings. One case presented an invasive epidermoid carcinoma of the larynx 18 months following the initial cytology. Nine of the cases had the diagnosis of bronchogenic carcinoma established within two months of the initial cytological findings. One case presented suspicious and malignant cells six years prior to establishment of a bronchogenic carcinoma.

The longest surviving patient following treatment is four years. One case died postoperatively. Six of the cases are surviving following surgery without evidence of recurrence. One case is under supervised observation because of the inability to localize the origin of the malignant cells. Experience with regression of abnormal epithelium in the ex-smoker will be discussed.

A New Concept in the Treatment of Hepatic Trauma

N. Frederick Hicken, MD,
A. James McAllister, MD,
Charles Edwards, MD, Salt Lake City

The liver has four closed, fluid systems: (1) the portal veins, (2) the hepatic veins, (3) the hepatic arteries, and (4) the bile ducts. Each system is separate and distinct—those of one lobule having no anastomotic connections with the other lobules Injury to or severance of one or all of these systems results in death of all hepatic tissue peripheral to the point of damage.

Mass approximation of the lacerated liver tissue, by ligatures, provides no assurance the damaged bile ducts and blood vessels will restore their functional continuity. As a rule the devascularized segments of the damaged liver die.

Experiments show that by operative hepatography (contrast roentgenography) the site of injury and the extent of damage can be accurately determined. This permits debridement of the devascularized segments.

Correlation of Selective Coronary Arteriography and Clinical Symptoms

Harold V. Liddle, MD, Salt Lake City

Selective coronary arteriography is an objective method for diagnosis of coronary arterial obstruction. The purpose of this study is to determine the reliability of this test by examining the correlation between arteriographic findings and the clinical patterns of myocardial ischemia. If selective coronary arteriography is a dependable diagnostic tool, there should be a high degree of correlation between the classical clinical syndrome and significant arteriographic abnormalities.

A single observer has performed 194 selective coronary arteriograms of which 167 form the basis of this report. The remaining studies were done either for postoperative re-evaluation or for rheumatic valvular disease. Two studies were inadequate. These 167 patients were classified in five groups. Group 1—25 patients with arrhythmia, non-coronary chest pain, or no coronary symptoms; 2 patients had abnormal vessels—92 per cent correlation. Group 2—angina syndrome—of 65 patients with atypical chest pain and inconsistent electrocardiograms who were considered normal; 54 patients were normal—83 per cent correlation. Group 3—anginal—20 patients with stress related chest pain without consistent electrocardiographic or nitroglycerin response; 15 patients had significant disease—75 per cent correlation. Group 4—angina 2—51 patients with the classic pattern of angina pectoris and electrocardiographic abnormalities; 47 patients had significant disease—92.2 per cent correlation. Group 5—consists of 6 patients with proved myocardial infarction but without residual angina; all 6 had arterial deformity and 5 had severe obstruction.

The degrees of arterial obstruction found were retrospectively related to the five symptom groups. Only 20 (22.2 per cent) of the 90 patients with normal or inconclusive clinical patterns had any arterial deformity, 12 of these were advanced. Seventeen (85 per cent) of the 20 angina 1 patients had arterial deformity, 15 of which were severe obstructions. Fifty-three (93 per cent) of the 57 patients with angina 2 or infarction histories had abnormal arteries and of these 52 were severe lesions.

This study demonstrates a high degree of correlation between selective coronary arteriographic findings and rigidly controlled clinical criteria for coronary arterial obstructive disease.

Tracheal Stenosis Due to Aberrant Left Pulmonary Artery

Conrad B. Jenson, MD, Ph.D.,
Russell M. Nelson, MD, Ph.D., Salt Lake City

Vascular rings causing tracheal compression are usually due to anomalous formations of the aorta and its branches, which may be diagnosed by thoracic aortograms. A rare, but completely correctible vascular anomaly causing respiratory distress which cannot be demonstrated by aortography is due to an aberrant left pulmonary artery, which usually passes between the esophagus and trachea. This is best demonstrated by pulmonary arteriograms.

This presentation concerns an infant in whom this anomaly was diagnosed preoperatively by pulmonary arteriograms and successfully treated by division, transplantation, and anastomosis of the aberrant left main pulmonary to the main pulmonary artery anterior to the trachea.

Movies depicting the diagnostic and operative technics employed, together with a postoperative pulmonary arteriogram will be presented.

Plastic Reconstruction of the Mitral Valve

W. R. Rumel, MD, Salt Lake City

Since 1959, 200 open operations on the mitral valve using cardiopulmonary bypass have been performed for rheumatic mitral stenosis, mitral regurgitation, and for cases of combined stenosis and regurgitation. The mitral valve was reconstructed using a uniform three-step procedure, consisting of: (1) Anterior *and* posterior commissurotomy, (2) valvoplasty with repair of the cusps *and* the subvalvular supports, and (3) anterior *and* posterior annulorrhaphy, advancing the minor cusp to a normal approximation with the major cusp. The combined hospital and late mortality rate has been 15 per cent. (During the past three years the combined hospital and late mortality rate has been 8.5 per cent.)

Embolic complications have been unusual—1 per cent—without the use of anticoagulation. Persistent or recurrent regurgitation of significance

has been rare as has been recurrent mitral stenosis because of restoration of good valve mobility. Clinical improvement has been very gratifying in that the vast majority of patients, approximately 85 per cent (follow-up nearly complete), having shifted from Functional Classes III and IV to Functional Classes I and II. Details regarding patient selection and follow-up will be presented. A movie will be available for demonstration of the operative technic employed.

Sources of Diagnostic Error in Patients Receiving Estrogens or Oral Contraceptives

Don H. Nelson, MD, Salt Lake City

The widespread use of estrogen and estrogen-like substances, both therapeutically and as contraceptives, has directed increased attention to the many physiologic effects which may occur in patients taking these substances. Some of the responses to estrogen therapy may result in mistaken diagnoses and therefore the practitioner whose patients are taking these substances should be aware of the changes produced. Estrogen administration produces a number of alterations in plasma proteins and thus may result in increased levels of protein-bound iodine or plasma corticosteroids as the result of an increase in TBG or CBG. In addition, estrogen administration may result in an abnormal glucose tolerance and can lead to a mistaken diagnosis of diabetes mellitus. Other changes which occur include increase in plasma renin and serum growth hormone, histologic changes in the endometrium and the better known effects on menstruation and lactation. Studies in this investigator's laboratory have demonstrated biochemical changes in steroidogenesis by the adrenal cortex which result in decreased response of the adrenal gland to the substance metopirone. Thus, when this substance is used in the diagnosis of hypopituitary states, a mistaken diagnosis may result if the patient is taking estrogens. Further investigation is underway to determine whether there is a general biochemical effect of large amounts of estrogen substances which results in the alterations in normal physiology observed.

Treatment of Congenital Dislocation of the Hip

Paul A. Pemberton, MD, Salt Lake City

Treatment of congenital dislocation of the hip should be divided into three age groups. The first group from the time of birth to one year is best treated conservatively starting as early as possible, probably within the first week. Treatment is carried out by some type of abduction device and this is to be continued as long as improvement continues or until adequate stability is reached.

The second age group is one year to about twelve. Treatment of this age group is best carried out by surgery with pericapsular osteotomy of the ilium and rotation of the iliac portion of the acetabular roof out over the femoral head after reduction of the dislocation. This is an operation that has been done now for over 11 years and has come to be accepted as a standard procedure in the surgical management of congenital dislocation of the hip. It should not be done before the age of one year because of the soft bone of the pelvis nor beyond the age of twelve years because the tri-radiate cartilage gets too rigid to be used as a hinge.

In those over twelve years of age management is more difficult and consists of a reconstructive procedure on the hip either by rotation of the acetabulum or by a metal prosthesis put in at a high level.

Results of the various methods of treatment in the different age groups will be shown.

A Report on 277 Intra-arterial Infusions for Advanced Malignant Disease

Charles R. Smart, MD, Salt Lake City

Medical literature is replete with glowing reports on continuous intra-arterial infusion of various drugs in patients with incurable malignancy. Many of these reports are on small series of patients followed for relatively short periods of time. The present series of 277 intra-arterial infusions was accumulated at UCLA over a five-year period, 1960-1965. The paper is presented in an effort to help the physician better evaluate the technic, drugs used, risks and end results of continuous infusion therapy.

End results were evaluated by objective decrease in tumor size, minimal being 25 to 49 per cent and significant being 50 to 100 per cent; and by mortality rate (death within one month). The overall response of the 277 patients showed 26—39 per cent with regression of tumor and 11 per cent mortality. There were no deaths in the 17 patients from 0 to 10 years of age but a 25 per cent mortality rate in those over 60 years of age. In the 120 patients treated with methotrexate and citrovorum factor there were 21 per cent deaths as contrasted with only 3 per cent deaths in the 92 patients treated with 5-Florouracil. There was a 17 per cent mortality rate in external carotid artery infusions as contrasted with 10 per cent in the hypogastric artery and 8 per cent in the hepatic artery infusions. Duration of response and complications will be covered.

Surgical Treatment of Spinal Cord Meningiomas

Bruce F. Sorensen, MD, Salt Lake City

Spinal cord tumors present perplexing diagnostic problems in their early clinical course. If the tumors are benign and diagnosed early, the prognosis is excellent. Of 320 tumors causing spinal cord compression operated upon over an 18-year period at the Cleveland Clinic, 50 were meningiomas. Thirty-eight of the meningiomas were found in females and twelve in males. The average onset of symptom was 52.3 years. In most patients, the duration of symptoms was less than two years. The most common symptom was pain which was found in 78 per cent, and pain was

usually the first symptom experienced by the patient. Other symptoms were weakness, numbness, bladder and bowel disfunction, and incoordinations. Change in superficial and deep reflexes was present in 92 per cent of patients. Other physical findings included weakness and atrophy and decrease of sensation to pain, temperature, and touch. Pantopaque myelography was performed on 47 of the 50 patients, and all were abnormal and localized the tumor. Most patients had partial or complete block with Queckenstedt testing (jugular compression) during the spinal puncture. Eighty-two per cent of the tumors were located in the dorsal spine, 14 per cent in the cervical spine, and 4 per cent in the lumbar spine. The meningiomas were well circumscribed and capsulated, and with the exception of one, were all located intra-durally. Operative results were as follows: No change or worse in 10 per cent; minimal improvement in 4 per cent; moderate improvement in 18 per cent; and excellent improvement in 66 per cent. (One patient died with a coronary occlusion on the sixth postoperative day.) One patient had multiple meningiomas of the spinal canal.

Computer-based Bedside Monitoring of Postoperative Cardiac Patients

Alan F. Toronto, MD,
Homer R. Warner, MD, and
Reed M. Gardner, MD, Salt Lake City

A computer-based bedside monitoring system for the care of postoperative cardiac patients has been developed recently at the Latter-day Saints Hospital. Stroke volume, heart rate, cardiac output, pressure, and peripheral resistance can be calculated beat-by-beat from the time-course of the central aortic pressure contour. Venous pressure, respiratory amplitude, and respiratory rate can be calculated from the central venous pressure catheter inserted in the operating room. For the arterial pressure a teflon catheter (90 cm in length, .5 mm ID and 1 mm OD) is advanced through a thin-walled 18 gauge needle from a femoral or radial artery into the thoracic aorta for recording pressure with a Statham P23 Db strain gauge. This is usually done the day before surgery but can be inserted either in surgery or later at the bedside.

In the intensive care unit a console at the nurses' station contains switches for controlling various computer program options and a memory oscilliscope for displaying a beat-by-beat plot and a print-out of average values of each of the above calculated variables at the end of a given run. These averaged values are stored on a magnetic disc along with the time of day, and at any time the doctor may request a plot of the time-course of these stored variables over a specified period of time or call for a list of individual values, page by page, on the memory oscilliscope. The system has proved useful to both the attending physician and nursing staff in the care of these acutely ill patients.

The University of Utah Experience in Renal Transplantation

Keith Reemtsma, MD, and
Lawrence E. Stevens, MD, Salt Lake City

Eighteen patients have undergone renal allotransplantation at the University of Utah, beginning in January, 1965. All of these patients were in terminal uremia, requiring dialysis for survival. Ten of the patients received kidneys from cadavers and eight from living relatives. Nine of the patients are living, and six patients have excellent renal function and have returned to normal activities. The longest survivor is now 28 months and working full-time. Peritoneal dialysis was utilized for support of the patients in the earlier phase of our program, but hemodialysis has been used preferentially in the past six months. Of the 11 patients receiving transplants supported by hemodialysis eight are surviving and five have good renal function. The other three patients are awaiting transplantation of a second kidney after losing their first by rejection or ischemic damage during cadaver organ procurement.

All patients have received immunosuppressive medication which included azathioprine and steroids, with Actinomycin C and local irradiation given if rejection occurs. Pneumonitis has been the most frequent complication encountered in our patients, with seven of the nine patients succumbing after transplantation showing marked pulmonary infection. The other two patients died of peritonitis following peritoneal dialysis while receiving immunosuppressive medication.

Careful avoidance of overtreatment with immunosuppressives, better preparation of the uremic patient with dialysis prior to transplantation, and simplification of the operative procedure have led to better results in the recent months of our program.

Selection of donors by tissue typing and the use of anti-lymphocyte antiserum to forestall rejection offer promise for further improvement in survival rates, and these methods are under active development in our program at this time.

Calcification in Malignant Tumors

Henry P. Plenk, MD, Salt Lake City, and
Allan Freeman, University of California Medical School, San Francisco

Finding of calcium in a tumor is usually attributed to either hemorrhage or necrosis. Certain tumors like neuroblastomas are known to have a high incidence of calcification (57 per cent) which actually helps in the differential diagnosis. Other tumors such as lymphomas are more apt to develop calcification following successful radiation therapy.

Calcification of metastatic tumors has been reported more recently with increasing frequency.

The literature is reviewed in an attempt to learn to what extent the location and pattern of calcification can be useful in the diagnosis.

Representative cases from our own material are demonstrated.

Inducing Ovulation with Human Menopausal Gonadotropin

HOWARD G. MCQUARRIE, MD, Salt Lake City

Recognition of the potential of pituitary gonadotropins for treatment of human ovarian failure led to the development of human Follicle Stimulating Hormone of pituitary origin. Several investigators have developed methods of extracting the principles from human post-menopausal urine as a more practical source of a potent, standardized, gonadotropin preparation.

This report describes the experience of the author utilizing a standardized gonadotropin preparation to induce ovulation in carefully controlled clinical research studies. Ovulation was established by at least four of six criteria: cervical mucus change, cytological change of vaginal epithelium, pregnanediol determinations, thermogenic response, endometrial biopsy, and pregnancy. The treatment cycle involved the sequential administration of human menopausal ganadotropin (HMG-ORTHO)* and human chorionic gonadotropin (HCG).

The disorder of secondary amenorrhea and anovulation is symptomatic of ovarian, pituitary, adrenal, hypothalamic, or psychogenic disorders. A thoughtful, careful evaluation of these problems is necessary. Each patient treated was evaluated by testing to establish the cause of the secondary amenorrhea and/or anovulation. All patients treated were also evaluated by culdoscopy except one which had a celiotomy and establishment of the diagnosis of polycystic ovary syndrome.

From November 1, 1966, to May 15, 1967, eleven patients were treated with this preparation for 18 cycles of treatment. Ovulation was induced in 11 cycles of treatment. Amenorrhea was corrected in all but one patient while under treatment. Pregnancies have resulted in patients who desired conception. One patient aborted a twin gestation spontaneously in the thirteenth week of gestation.

In summary, the use of human menopausal ganodotropin has been used by the author to treat secondary amenorrhea, infertility, and anovulation in a group of private patients who have undergone careful clinical evaluation to establish the cause of the endocrine disorder. Nine of the twelve patients treated developed ovarian cysts which resolved spontaneously with no surgical intervention. No other untoward reactions occurred. Ovulation was induced in 12 cycles (66 per cent), and amenorrhea was corrected while under treatment in ten (91 per cent) of patients. One treatment failure has been since diagnosed as premature menopause and ovarian failure. Pregnancy ensued under and after treatment in three patients of eleven desiring pregnancy (27.3 per cent).

*HMG-ORTHO, Ortho Research Foundation, Raritan, New Jersey.

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

Governor John A. Love has signed into law a bill changing the name of Colorado Psychopathic Hospital at the University of Colorado Medical Center to "Colorado Psychiatric Hospital."

The change is effective July 1.

Senate Bill 404, adopted by the last session of the State Legislature, changes the name to "the University of Colorado Psychiatric Hospital" to conform with modern professional usage.

The hospital, known as Colorado Psychopathic Hospital since its construction in 1922-24, has been designated in Colorado statutes as "the psychopathic hospital and laboratory of the University of Colorado." It was the first university-operated psychiatric hospital west of the Missouri River and the fifth institution of its kind in the nation.

* * * *

Dr. Kenneth C. Sawyer, Sr., Denver surgeon, has been installed as 1967-68 president of the University of Colorado Medical Alumni Association. He has been a delegate of the Colorado Medical Society to the American Medical Association for 11 years and serves as vice chairman of the AMA's Council on Medical Education.

Dr. Sawyer was one of two recipients of the university's highest alumni honor, the Norlin Award, at a banquet June 8 in Boulder.

Dr. F. A. Garcia, Denver plastic surgeon, was chosen as president-elect to take office in June next year. Members of the association re-elected Dr. L. Joseph Butterfield as vice president, and Dr. William E. Jobe as secretary-treasurer. Dr. Richard W. Whitehead, emeritus professor of pharmacology, serves as executive secretary of the association.

* * * *

Dr. Theodore T. Puck, professor of biophysics in the University of Colorado School of Medicine, is one of 91 distinguished Americans in the fields of science, medicine, law, economics, architecture and the arts who have been elected to fellowship in the American Academy of Arts and Sciences.

Dr. Puck holds a lifetime research professorship from the American Cancer Society and is director of the Eleanor Roosevelt Institute for Cancer Research at the CU Medical Center in Denver. Dr. Puck is the only Coloradan among the new fellows elected to the academy and among six scientists selected from the fields of biophysics and biochemistry. He has been a member of the CU medical faculty since 1948.

OBITUARIES

Colorado

Dr. Fordyce H. McCabe died May 6, 1967, in the 93rd year of his life, at Frasier Meadows Manor in Boulder, following a long illness.

He was born in Rock Island, Illinois, on April 29, 1875, to Hiram B. and Electa D. McCabe. He received his primary education in the public schools of Muscatine, Iowa. Later he attended the University of Iowa Medical School in Iowa City, where he was graduated with an M.D. degree in 1899.

Following a brief internship in the University Hospital in Iowa City, he began the practice of medicine in 1900 in Farfield, Nebraska. From 1907 to 1912 he practiced medicine in Arapahoe, Nebraska, and from 1912 to 1927 in Cambridge, Nebraska. In 1927 he moved to Frederick, Colorado, and practiced medicine in that community until 1944, at which time he moved to Boulder, where he continued the practice of medicine until a few years before his death.

Dr. McCabe was married first to Carrie Waite. Following her death he was married again on July 29, 1936, in Colorado Springs to Lillian Bozett, a prominent member of the Boulder Woman's Club. Lillian Bozett McCabe passed away on March 10, 1961.

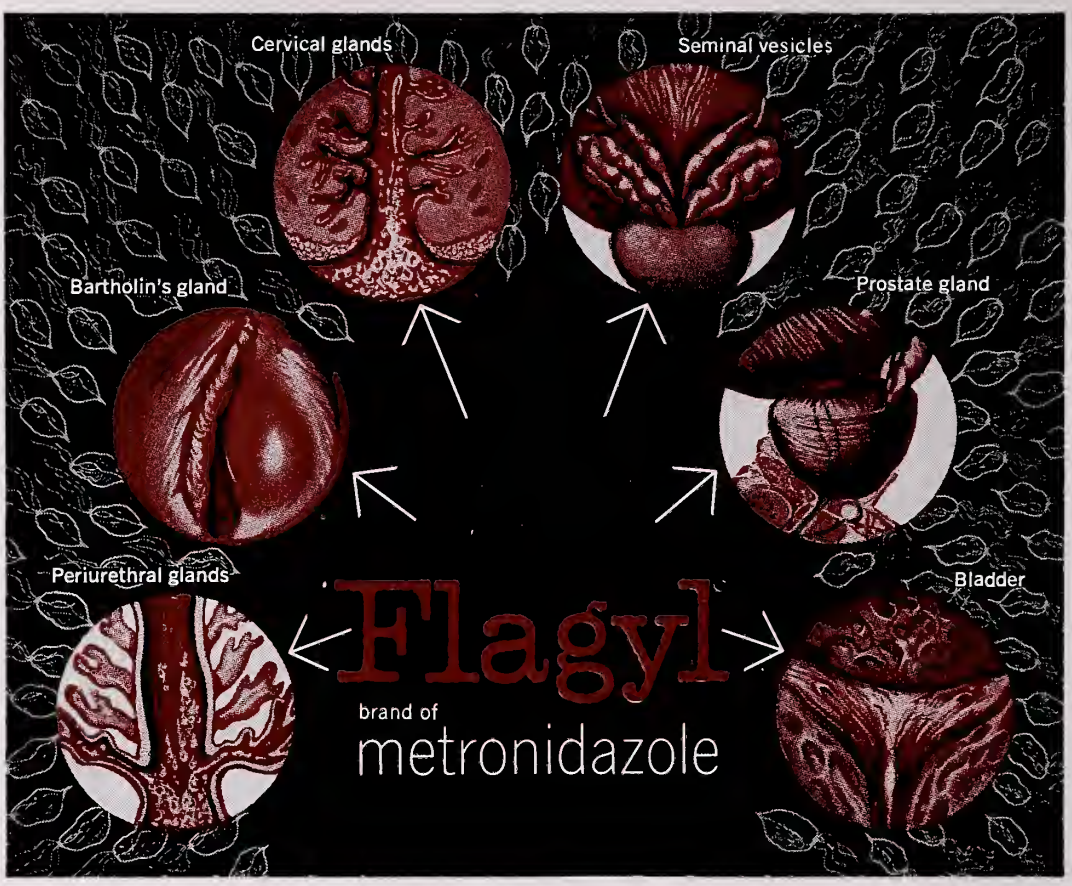
Dr. McCabe was a veteran of World War I, during which he served with the 89th Division with the rank of a Major as commander of Field Hospital No. 345 in France. Following his discharge from the Army in 1919, he was quite active in the American Legion, serving as commander of the Cambridge, Nebraska, Legion Post, of which he was a charter member, and later as commander of the Wiley, Colorado, Legion Post. He was a past chef de gare of Boulder Voitre of Forty and Eight.

He was also active in Masonry, in El Jebel Shrine, and High Twelve. He was a lifelong member of the Congregational Church.

Dr. McCabe throughout his life was active in civic affairs and was a lifelong Republican. He is survived by a daughter, Mrs. Gwendolyn Mousel of Denver, a nephew, Dr. Fordyce G. McCabe, and a niece, Mrs. Lucia Kendrick, both of Boulder. Another nephew, Harold McCabe, resides in California. Three grandchildren, Cynthia, Stanford and Claudia Mousel, reside in Denver.

Montana

Myron E. Veseth, M.D., died on March 20, 1967. Dr. Veseth was born March 8, 1915, in Malta, Montana. He received his M.D. degree from the University of Colorado School of Medicine in 1942 and was engaged in the general practice of medicine in Colorado until 1947 when he moved to Montana. Dr. Veseth was a member of the Montana Medical Association and of the American Medical Association through the Hill County Medical Society.



Destroys Trichomonads Wherever They Are

Flagyl seeks out the sites where trichomonads hide. Only a systemic agent can. Only Flagyl does, selectively and effectively.

Flagyl destroys trichomonads in the inner crypts, glands and cavities of the genitourinary tract in both women and men. Consequently, Flagyl is capable not only of curing trichomoniasis in women but also of preventing reinfection.

Correctly used, with due attention to repeat courses of treatment for resistant, deep-seated invasion and to the presumption of reinfection from male consorts, Flagyl has repeatedly produced up to 100 per cent cure in large series of patients.

When the diagnosis of trichomoniasis is positive, Flagyl is positive.

Dosage and Administration — In *women:* one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When the inserts are used one vaginal insert should be placed high in the vaginal vault each day for ten days, and concurrently two oral tablets should be taken daily.

In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

Contraindications — Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution — Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side Effects — Infrequent and minor side effects include nausea, metallic taste, furry tongue and headache. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness of an extremity, joint pains, confusion, irritability, weakness, flushing, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

Dosage Forms
Oral—250-mg. tablets. Vaginal—500-mg. inserts

SEARLE *Research in the Service of Medicine*

cut ---- cut ---- cut ---- cut ---- POST ON YOUR HOSPITAL BULLETIN BOARD ---- cut ---- cut ---- cut ----

THE GREENS HERE AT THE BROADMOOR ARE SOMETHING ELSE!

DOCTOR, IF YOU ARE NOT PLAYING IN THE USGA NATIONAL AMATEUR ⛳ WHY NOT PLAY IN THE "colorado M.D. invitational" GOLF TOURNAMENT ⛳⛳

⛳ THE USGA NATIONAL GOLF TOURNAMENT, THE BROADMOOR HOTEL, AUGUST 29 - SEPTEMBER 2, 1967

⛳⛳ THE "colorado M.D. invitational" GOLF TOURNAMENT, SEPTEMBER 20-23, 1967

ELIGIBILITY

This golf tournament is open to all M.D.'s who are registered at the Colorado Medical Society's Annual Session and who are guests of the Broadmoor Hotel (with certain exceptions).

PLAY AND PRIZES

This will be a best ball, two man tournament, with eighteen and thirty-six hole prizes for low gross and low net scores (Established USGA Handicap or Golf Committee's decision).

ENTRY FEE

$25.00 per team. Reservations are being accepted in order of receipt. For further information write:

Dr. Golf
1809 East 18th Avenue
Denver, Colorado 80218

97th ANNUAL SESSION -- COLORADO MEDICAL SOCIETY

The Colorado Medical Society

Cordially Invites You to Attend

The 97th Annual Session

Broadmoor Hotel, Colorado Springs

September 20-23, 1967

MEETINGS OF THE HOUSE OF DELEGATES

10:00 a.m., Wednesday, September 20, 1967
2:00 p.m., Friday, September 22, 1967
8:00 a.m., Saturday, September 23, 1967

GUEST FACULTY

Robert H. Barter, M.D., Head, Ob-Gyn Department, George Washington University School of Medicine, Washington, D.C.

Duane Catterson, M.D., Medical Assistant, Medical Research and Operations, NASA Manned Spacecraft Center, Houston, Texas

Richard T. Farrior, M.D., Plastic Surgeon and Otolaryngologist Private Practice, Tampa, Florida

Alvin S. Isaacson, M.D., Associate Head, Orthopedic Department of Children's Hospital of Los Angeles; Associate Clinical Professor of Orthopaedics at University of Southern California

Francis L. Land, M.D., Chief of Medical Division, Bureau Family Services, Washington, D.C.

Allen W. Mathies, Jr., Ph.D., M.D., Head Physician, Communicable Disease Service; Assistant Professor of Pediatrics, University of Southern California School of Medicine

John S. Millis, Ph.D., President, Western Reserve University, Cleveland, Ohio

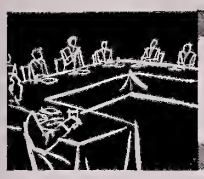
William C. Shoemaker, M.D., Director, Department of Surgical Research, Hektoen Institute, Cook County Hospital, Chicago, Illinois

S. Herbert Shubin, M.D., Assistant Professor of Medicine, University of Southern California

NO REGISTRATION FEE

Annual Banquet, Thursday Evening, September 21

R S V P



MEETINGS

Pacific Coast Fertility Society

The Fifteenth Annual Meeting of the Pacific Coast Fertility Society will be held at Mountain Shadows Resort and Country Club, Scottsdale, Arizona, September 28-October 1, 1967. A stimulating and outstanding program in the broad field of reproductive physiology will be offered.

Dr. M. C. Shelesnyak, Weizmann Institute of Science, Rehovogh, Israel, will be one of the distinguished guest lecturers. Among other special presentations will be a panel, "Current Trends in Contraception," and a workshop, "Current Laboratory Tests Concerning Infertility." Additional features of the 1967 program will be announced later.

The meeting is open to physicians, interns, residents, fellows and nurses.

For information write to the office of the Pacific Coast Fertility Society, 5410 Wilshire Boulevard, Los Angeles, California 90036.

Rocky Mountain Cancer Exposition

A week-long exposition on research, treatment, diagnosis and detection of cancer will be held at the Denver Coliseum November 27-December 3, 1967.

Sponsored by the Denver unit of the American Cancer Society, the Rocky Mountain Cancer Exposition is also designed to encourage young people of the Rocky Mountain area to seek careers in medicine and the allied professions.

The unique exposition—believed to be the only one of its kind ever attempted in the U. S.—will feature graphic displays by medical, veterinarian, nursing, dental, business and government groups on various aspects of the continuing fight to control cancer.

Because of the fact that one out of three cancer patients is now being saved through early detection and improved technics, the theme of the exposition will be "Horizons of Hope."

The exposition, which follows the general pattern of the highly successful Colorado Health Fair of 1961, has received the official approval of the American Cancer Society and is expected to attract more than 100,000 persons during the week.

American Medical Writers' Association

The 27th Annual Meeting of the American Medical Writers' Association (AMWA) will be held at the Palmer House in Chicago, September 21 to 24. The program is designed for both physicians and journalists with interest in the field of medical writing. Attendance is open to both members and non-members of AMWA.

A major feature of the meeting is a workshop in which manuscripts submitted in advance are critically reviewed by panels of editors. Among special sessions this year will be discussions of educating medical writers, ethics in medical journalism, new methods of approaching the literature, drug information as viewed by government, industry and the journals, and medical news for the physician.

Further information may be obtained from AMWA, Post Office Box 267, Arlington, Va. 22210.

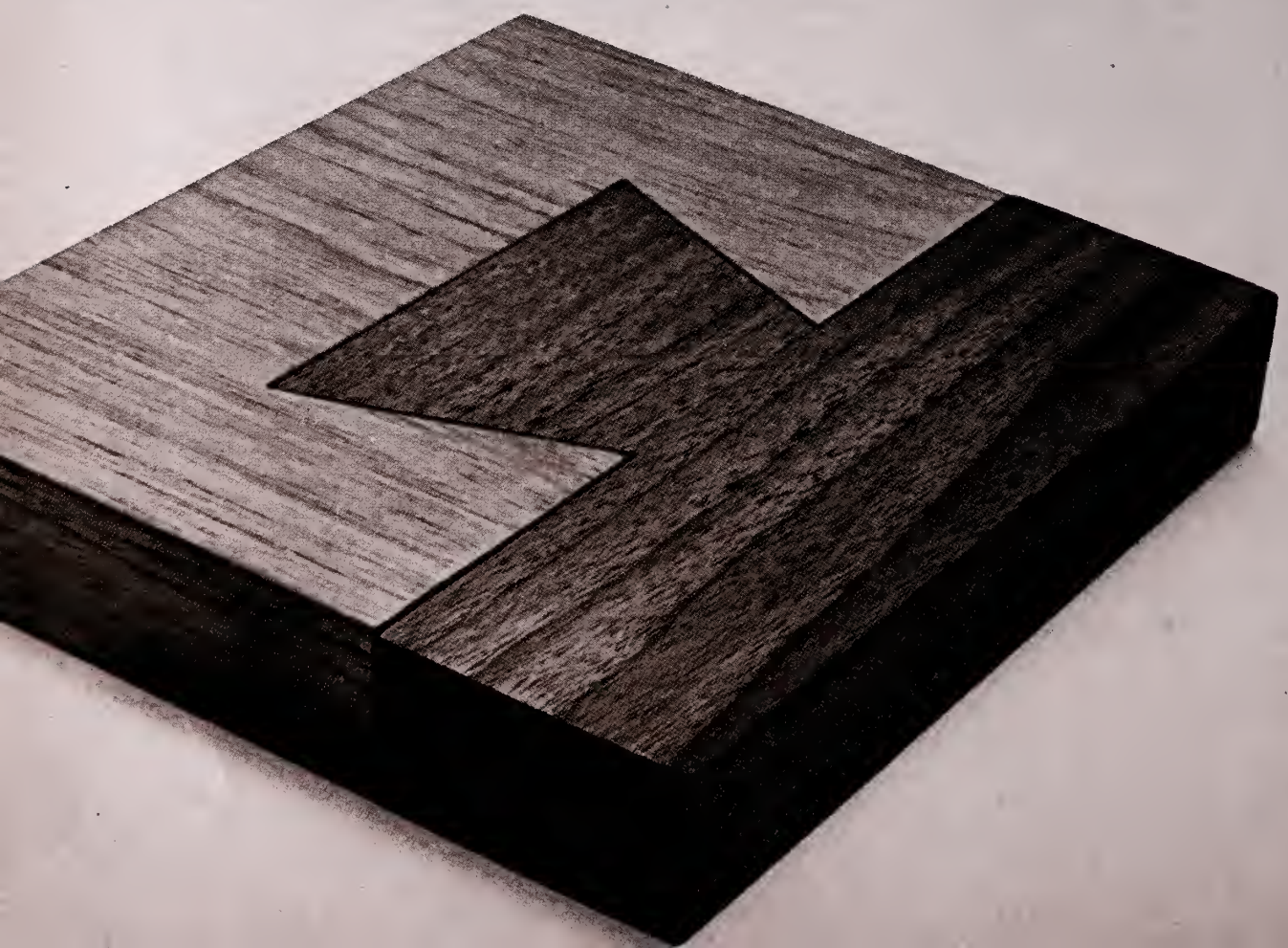
American College of Surgeons

The Montana-Wyoming Chapter of the American College of Surgeons will hold its regular annual meeting at Jenny Lake Lodge, Jackson Hole, Wyoming, on Friday, September 8, and on Saturday, September 9. Montana physicians are cordially invited to attend this meeting.

even better together
in mild hypertension

Serpasil®-Esidrix®

(reserpine and hydrochlorothiazide CIBA)
Combination Tablets

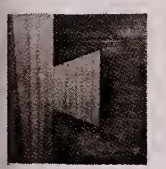


Serpasil-Esidrix combines reserpine (the original, and most widely used, rauwolfia alkaloid developed by CIBA) with hydrochlorothiazide (the most widely used oral diuretic, also a product of CIBA research).

even better blood pressure reduction—because 2 antihypertensive agents of choice often work better together

One drug potentiates the antihypertensive action of the other. Blood pressure is generally controlled with relatively low dosages of each component, often resulting in minimized side effects.

Although each component alone may provide adequate therapy in many cases of mild hypertension, the combination offers advantages which cannot be achieved with single-drug therapy.



even more patient benefits—because complementary actions of 2 antihypertensive agents extend the range of advantages

Reserpine, in addition to lowering blood pressure, provides central calming action to help relieve anxiety and tension; provides bradycrotic action to slow the rapid heart.

Hydrochlorothiazide, in addition to lowering blood pressure, relieves edema; permits relaxation of salt restriction.

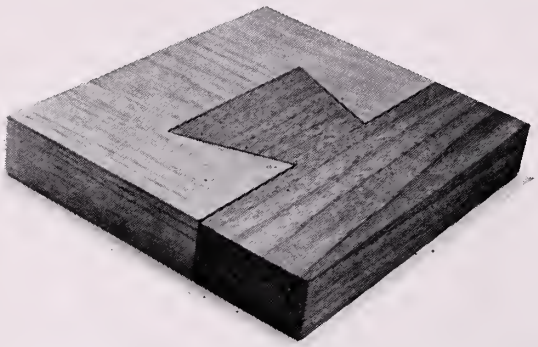
The combination provides medication in one tablet instead of two; one prescription instead of two—encourages patient adherence to the regimen, offers economy.

for your next patient with mild hypertension

Rx Serpasil-Esidrix Combination Tablets

Please see following page for prescribing information.

Serpasil®-Esidrix®
(reserpine and hydrochlorothiazide CIBA)
Combination Tablets



INDICATIONS: Mild to moderate hypertension, especially when complicated by anxiety, tachycardia, or edema.

SIDE EFFECTS AND PRECAUTIONARY MEASURES

Serpasil® (reserpine CIBA)
Occasional side effects: lassitude, drowsiness, nasal congestion, looseness of stools, increased frequency of defecation. Rare side effects: anorexia, headache, bizarre dreams, nausea, dizziness, skin rash.

Severe mental depression has appeared in a small percentage of patients, primarily in a dosage above 1 mg daily. When the drug is discontinued, depression usually disappears, but hospitalization and shock therapy are sometimes required.

Caution: Withdraw reserpine 2 weeks before surgery, if possible. For emergency surgical procedures, give vagal blocking agents parenterally to prevent or reverse hypotension and/or bradycardia.

Because reserpine may increase gastric secretion of hydrochloric acid, use cautiously in patients with peptic ulcer.

Use cautiously with digitalis, quinidine, or guanethidine. Not recommended for aortic insufficiency.

Esidrix® (hydrochlorothiazide CIBA)
Contraindictions: Oliguria, renal shutdown, progressive hepatic disease, and allergy to thiazides.

Warnings: Stenosis, hemorrhage, and ulceration of the small bowel have occurred with coated potassium tablets. Discontinue such medication when used with Esidrix if gastrointestinal disturbances arise.

Pay special attention to electrolyte balance of patients with severe renal or hepatic insufficiency. In patients with cirrhosis and ascites, watch for symptoms of impending hepatic coma. Thiazides may decrease glucose tolerance; use cautiously in diabetics. Hyperuricemia may occur but is readily reversed by a uricosuric agent. Lowering of blood pressure may sometimes result in nitrogen retention, particularly in patients with impaired renal function. Dosage titration is necessary in such patients.

Precautions: Watch for signs of fluid or electrolyte imbalance. Further electrolyte depletion may cause hypochloremic alkalosis and hypokalemia. Since the latter may precipitate digitalis intoxication, watch carefully patients who are taking digitalis or its glycosides or those with cardiac arrhythmias. In severe hypokalemia, large oral or intravenous doses of potassium may be required.

A few infants born of mothers who received thiazides during pregnancy have shown bone marrow depression with thrombocytopenia. Hydrochlorothiazide decreases responsiveness to exogenous norepinephrine and increases responsiveness to tubocurarine. Hypotensive episodes under anesthesia have been observed in some patients receiving thiazides.

Side Effects: In addition to those above, nausea, anorexia, headache, restlessness, constipation, dizziness, paresthesias, fatigue, increased sweating, cramps in arms and legs, diarrhea, abdominal pain. Rare reactions: purpura with or without thrombocytopenia, skin rash, photosensitivity, urticaria. Sometimes associated with hydrochlorothiazide: leukopenia, agranulocytosis, aplastic anemia, pancreatitis, jaundice, necrotizing vasculitis.

DOSAGE
Average dosage is 2 *Tablets #2* daily. For patients requiring less hydrochlorothiazide, substitute *Tablets #1*. For maintenance, reduce dosage to lowest effective level. When necessary, more potent antihypertensive agents may be added gradually in reduced dosages.

SUPPLIED
Tablets #2 (light orange), each containing 0.1 mg reserpine and 50 mg hydrochlorothiazide; bottles of 100 and 1000. *Tablets #1* (light orange), each containing 0.1 mg reserpine and 25 mg hydrochlorothiazide; bottles of 100 and 1000.

Consult complete literature before prescribing.

CIBA Pharmaceutical Company, Summit, N. J. C I B A

2/3595

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Atlas of Diseases of the Anterior Segment of the Eye: By Wolfgang Straub. N. Y., 1966, Blakiston. 217 p. Price: $21.00.
Atlas of Vascular Surgery: By Falls B. Hershey. 2nd ed. St. Louis, 1967, Mosby. 318 p. Price: $19.50.
Behavior Problems of Children: By Elinor Verville. Phila., 1967, Saunders. 567 p. Price: $7.75.
Biochemistry: By Abraham Cantarow. 4th ed. Phila., 1967, Saunders. 898 p. Price: $15.00.
Cancer Prognosis Manual: By Arthur G. James. 2d ed. N.Y., 1967, American Cancer Society. 83 p. Gift.
Cell Research and Cellular Therapy: Edited by F. Schmid. 1st English ed. Thoune, Switzerland, 1967, Ott Pub. 573 p. Gift.
Clinical Pathology: By Benjamin B. Wells. 4th ed. Phila., 1967, Saunders. 708 p. Price: $11.50.
A Companion to Manuals of Practical Anatomy: By Edward B. Jamieson. 7th ed. N .Y., 1963, Oxford Univ. Pr. 736 p. Price: $5.50.
Congestive Heart Failure: By Ralph M. Myerson. St. Louis, 1967, Mosby. 174 p. Price: $12.85.
Control of Communicable Diseases in Man: Report by the American Public Health Association. 10th ed. N. Y., 1965, American Public Health Assoc. 282 p. Price: $1.50.
Culture, Race, Climate, and Eye Disease: By Ida C. Mann. Springfield, Ill., 1966, Thomas. 580 p. Price: $21.00.
Disorders of the Voluntary Muscle: Edited by John N. Walton. Boston, 1964, Little, Brown. 628 p. Price: $20.00.
Drug Abuse: Escape to Nowhere: Prepared by Smith, Kline & French Laboratories. Phila., 1967, Smith, Kline & French. 104 p. Gift.
The Eye in Childhood: By the Ophthalmological Staff of The Hospital for Sick Children, Toronto. Chicago, 1967, Year Book. 537 p. Price: $25.00.
Gastroscopy; The Endoscopic Study of Gastric Pathologv: By Rudolf Schindler. 2d ed. N. Y., 1966, Hafner. 442 p. Price: $27.50.
Hearts: Their Long Follow-up: By Paul D. White. Phila., 1967, Saunders. 357 p. Price: $12.50.
The Id and the Regulatory Principles of Mental Functioning: By Max Schur. N. Y., 1966, International Univ. Pr. 220 p. Price: $5.00.
Ideal Marriage: Its Psychology and Technique: By Theodore H. Van de Velde. Revised ed. N. Y., 1965, Random House. 333 p. Price: $7.95.
Intervertebral Disc Protrusion in the Dog: Edited by Ghery D. Pettit. N. Y., 1966, Appleton. 194 p. Price: $9.50.
Love, Sex and the Teenager: By Rhoda L. Lorand. N. Y., 1965, Macmillan. 243 p. Price: $4.95.
Neurogenic Bladder: Edited by Saul Boyarsky. Balt., 1967, Williams & Wilkins. 306 p. Price: $14.50.
Neurology: By Roy R. Grinker. 6th ed. Springfield, Ill., 1966, Thomas. 1637 p. Price: $33.50.
Ocular Surgery: By Hermenegildo Arruga. 3d ed. N. Y., 1962, McGraw-Hill. 977 p. Price: $50.00.
Pathologic Physiology: Edited by William A. Sodeman. 4th ed. Phila., 1967, Saunders. 1051 p. Price: $19.00.
The Physiological Basis of Medical Practiee: By Charles H. Best. 8th ed. Balt., 1966, Williams & Wilkins. 1793 p. Price: $17.00.
Psychoanalytic Concepts and the Structural Theory: By Jacob A. Arlow. N. Y., 1964, International Univ. Pr. 201 p. Price: $4.00.
Sexual Problems: Edited by Charles W. Wahl. N. Y., 1967, Free Pr. 300 p. Price: $7.95.
The Stomach: Edited by Charles M. Thompson. N. Y., 1967, Grune. 474 p. Price: $23.50.
The Surgical Anatomy of the Temporal Bone and Ear: By Barry J. Anson. Phila., 1967, Saunders. 211 p. Price: $16.50.

Book Reviews

Early Management of Acute Trauma: By Allan M. Nahum. St. Louis, 1966, Mosby. 336 p. Price: $21.00.

Twenty-one contributors have combined their professional and journalistic talents to explore and outline proper therapy for the multiude of injuries seen in private practice.

While not a practitioner's cookbook, it is, nevertheless, an excellent compendium of the various modalities available for proper diagnosis and therapy.

Each author has covered his field quite thoroughly and presented the subjects in orderly and scientific fashion.

Impression: A good general reference in the field of trauma which should be beneficial reading for the private practitioner, the student and the hospital house staff.

Frederick K. Magnuson, M.D.

Neurological Diagnostic Techniques: Edited by William S. Fields. Springfield, Ill., 1966, Thomas. 429 p. Price: $16.00.

Neurological Diagnostic Techniques, the title of the Thirteenth Annual Houston Neurological Scientific Symposium, sponsored by the Department of Neurology, Baylor University College of Medicine, Texas Medical Center, Texas, was held in March of 1965. Papers were presented by world renowned authorities in various fields of neurology, neurophysiology, electroencephalography and neuroradiology.

The opening paragraph of Dr. Field's foreword to this symposium expresses the complexity of the book and the impossibility to review each of the topics. The subjects dealt with included metabolism, viral diseases, cerebral biopsy, electroencephalography, radioisotopic scanning, ultrasonic encephalography, clinical examination, psychological testing and computer technics. Dr. Fields' opening paragraph in the foreword states, "This volume is a collection of papers presented at the Thirteenth Annual Houston Neurological Symposium. The scientific meeting from which this material was compiled was devoted to presentation and discussion of diverse clinical and laboratory techniques currently employed in the diagnosis of disorders of the central nervous system and the neuromuscular apparatus."

Two of the papers, "The Value of Cerebral Biopsy," presented by Dr. Terry, professor of neuropathology at Albert Einstein College of Medicine, and "New Developments in Clinical Electroencephalography," presented by Dr. Gastaut, professor and director of the laboratories of neurobiology, Faculte de Medecine, Institut National d'Hygiene, Marseille, France, will be briefly reviewed here.

Dr. Terry in his paper on cerebral biopsy emphasizes that making a biopsy specimen offers neurochemical advantages over an autopsy specimen in making a diagnosis as well as, occasionally, differentiating operable cerebral tumor from an inoperable cerebral tumor. He discussed electron microscopic studies in infantile amaurotic family idiocy, juvenile lipidosis, Hurler's disease, Alzheimer's presenile dementia. His presentation and the following discussion present interesting and valuable ideas.

In his paper on "New Developments in Clinical Electroencephalography," Dr. Gastaut presents

some interesting electroencephalographic findings in patients with specific neurological disorders such as homonymous visual field defects, electrographic findings during somnambulistic episodes, findings during nocturnal epileptic psychomotor automatisms, new data on nonconvulsive generalized epileptic seizures or absences. His presentation will be interesting to all of those interested in clinical neurology as well as electroencephalography.

The past publications of the Houston Neurological Scientific Symposia have been very well done and very informative. This volume, also, is a valuable addition to the work in the field of neurological sciences.

Charles D. Bloomquist, M.D.

Shock: Chemistry, Physiology and Therapy: By William C. Shoemaker. Springfield, Ill., 1967, Thomas. 306 p. Price: $11.50.

The subject of this book has received considerable attention of late in the medical literature. Seldom does a month go by without numerous articles appearing on the subject. Unfortunately, the vast majority give rise to exaggerated claim, erroneous conviction, and a distorted philosophy. In short, they are poorly controlled studies.

This book does not propose an answer to the complicated and controversial problem of shock. It does, however, discuss the problem thoroughly and in a systematic manner. The nature of the problem, blood volume and micro-circulatory alterations, pathology, physiology, chemistry, diagnosis and treatment are discussed. Each chapter ends with a summary of the material presented and a list of the references mentioned in the chapter.

The last chapter summarizes the presented material in an attempt to produce a unified concept of the shock state which will provide a rational basis for effective therapy. The clinician will find the chapter on treatment especially rewarding. The indication, contraindications and precaution for use of specific therapeutic agents are described.

Albert F. Petrone, M.D.

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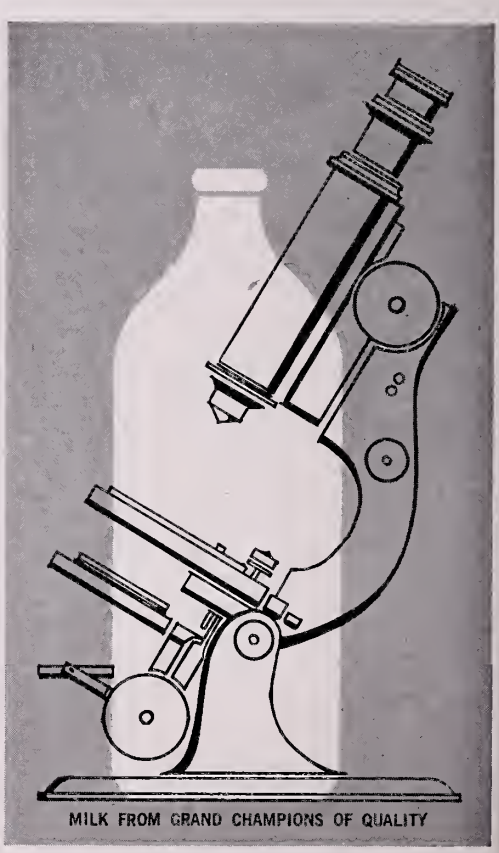
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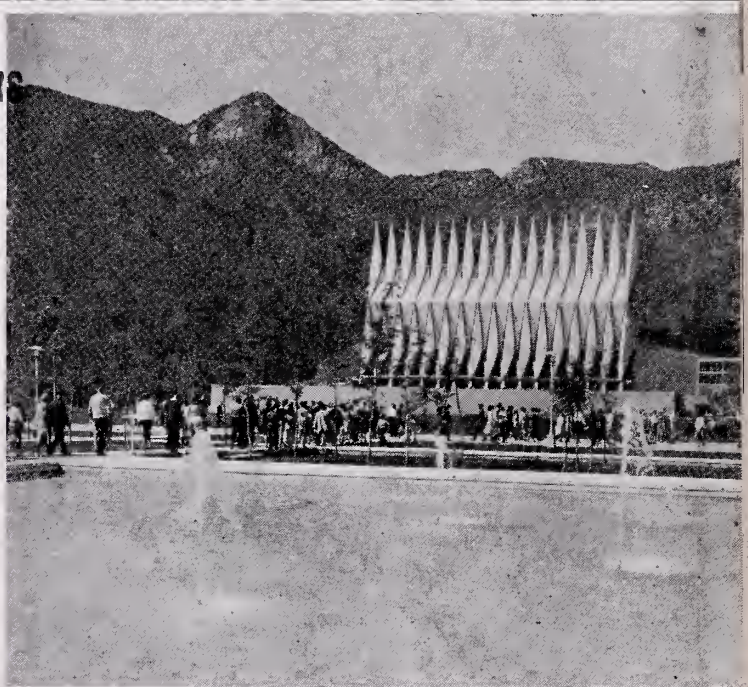

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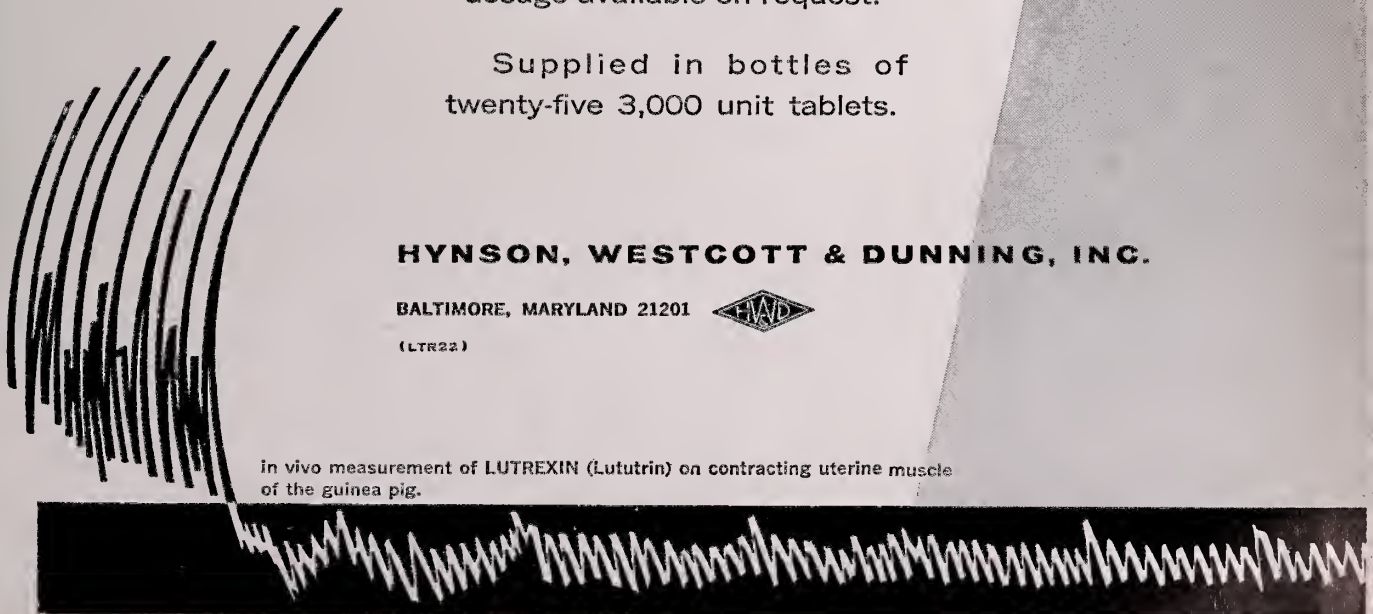

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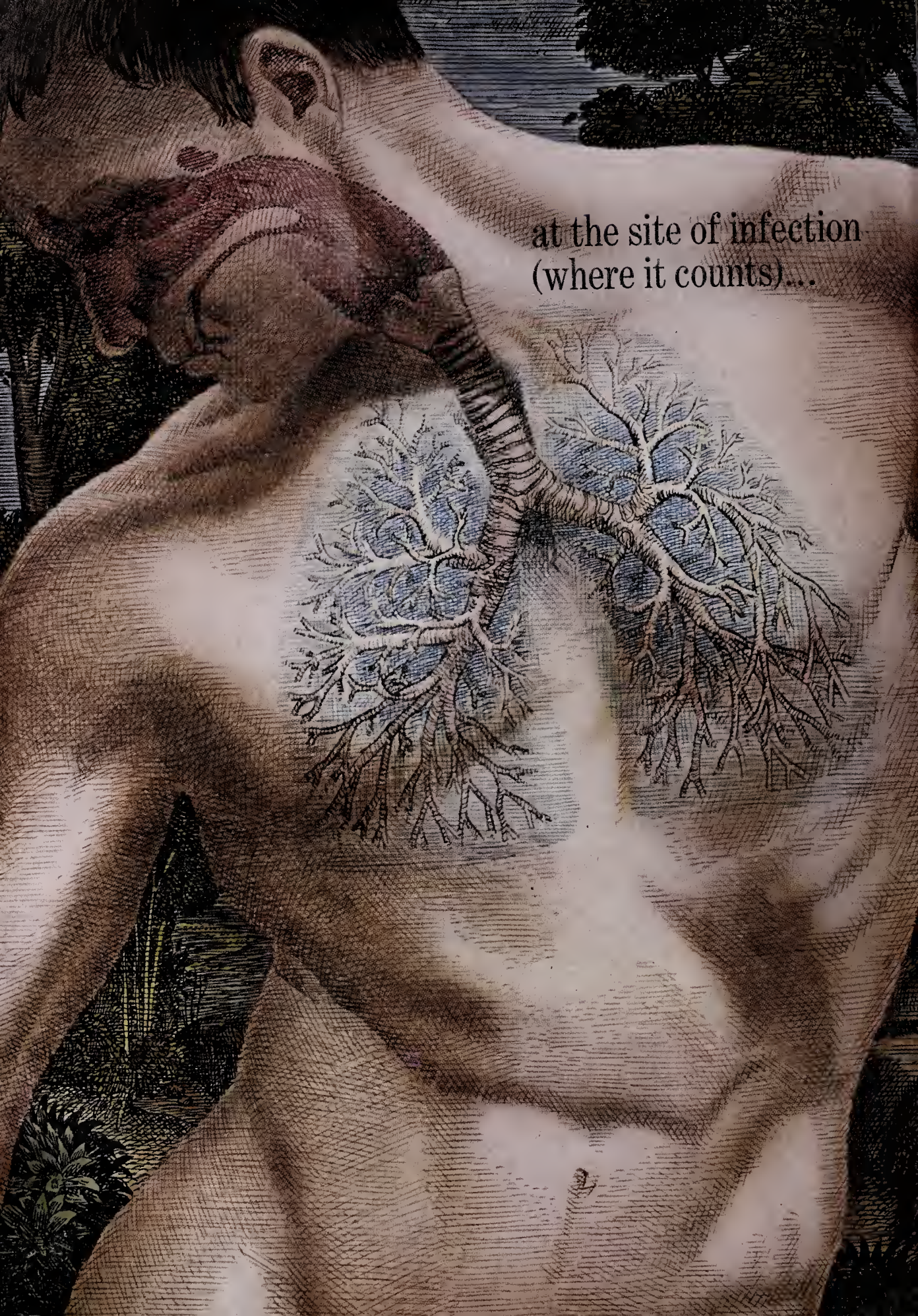
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Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

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In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared be definitely related to use of the drug, laboratory findings we characterized by increased direct-reacting bilirubin, elevat alkaline phosphatase levels, negative or weakly positive cepha flocculation and thymol turbidity tests, elevated serum glutan oxalacetic transaminase levels, peripheral eosinophilia, and n mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has r been reported in other patients taking prolonged courses of t medication. Patients with chronic infection have been given 1 to 2 Gm. of the drug daily for periods of two to six months, a patients with rheumatic fever have taken prophylactic doses 0.5 Gm. daily for two years without difficulty. In one group 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who to 250 mg. of Ilosone daily for an average of sixteen months rheumatic fever prophylaxis. The results were compared w those of a similar group of forty-four patients who received p icillin. There were no cases of jaundice in either group. Elevati of SGPT and serum alkaline phosphatase levels during the cou of treatment was observed in one patient treated with Ilosc and in two patients treated with penicillin. Seven other patie in the group receiving Ilosone and four others in the penicil group showed elevations in one of the tests at some time duri administration of the drugs.

Very satisfactory therapeutic results, without toxicity, w reported in 102 pediatric patients who received short-term (t day) courses of Ilosone in the treatment of streptococcus inf tions. Results of liver function tests in these patients we comparable to those in a similar control group who had receiv penicillin.

Gastro-intestinal disturbances not associated with hepatic fects are observed in a small proportion of individuals as a res of a local stimulating effect of the medication on the aliment tract; however, the normal intestinal gram-negative bacter flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urtica skin eruptions, and, on rare occasions, anaphylaxis.

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For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromy therapy should be considered.

In the treatment of syphilis, the recommended total dosag 20 to 30 Gm. given in divided doses for a period of ten to fift days. Close follow-up of the patient is necessary since eryth mycin drugs have not had adequate evaluation in all stages syphilis. Examinations of spinal fluid are recommended as p of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days recommended. In the treatment of gonorrhea, patients witl suspected lesion of syphilis should have a dark-field examinat before receiving antibiotics, and monthly serologic tests sho be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equival to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packag

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equival to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packag

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.-s packages, with dropper calibrated at 25 and 50 mg.

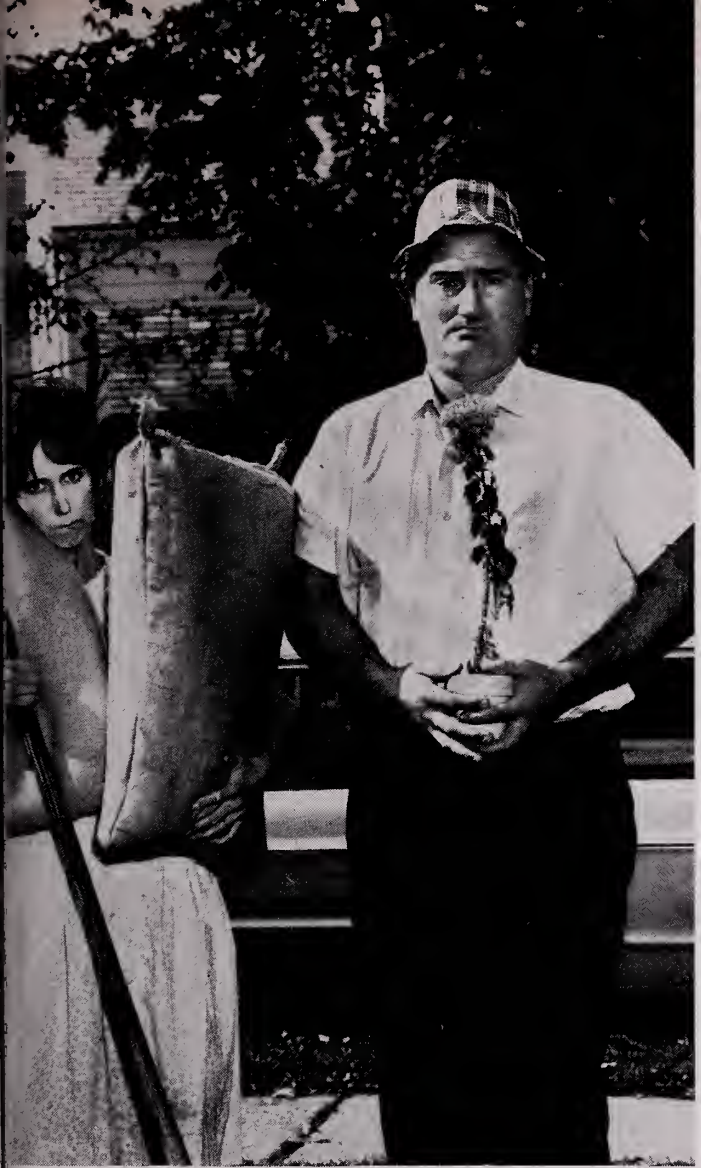
Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to bas in bottles of 50. [0327

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

Lil

7



Picture of low back pain

treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

Parafon Forte helps to relieve pain, restore mobility . . . stop pain-spasm feedback

Here is why. PARAFON FORTE provides:

a nonsalicylate analgesic equal to aspirin for the relief of pain,[1,2] yet unlikely to produce the irritation to the gastric mucosa so often associated with salicylate therapy[3]

and a skeletal muscle relaxant shown to have up to a 6-hour span of action,[4-6] and to retain effectiveness even on continued administration,[5-7] but which does not have the central effects of tranquilizing compounds.

Prescribe PARAFON FORTE for lasting spasmolysis and analgesia in sprains, strains, myalgias, low back pain, bursitis and other musculoskeletal disorders. Your patients will appreciate the restored comfort and lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

McNEIL

*U. S. PATENT NO. 2,895,877

McNEIL LABORATORIES, INC., FORT WASHINGTON, PA.

"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

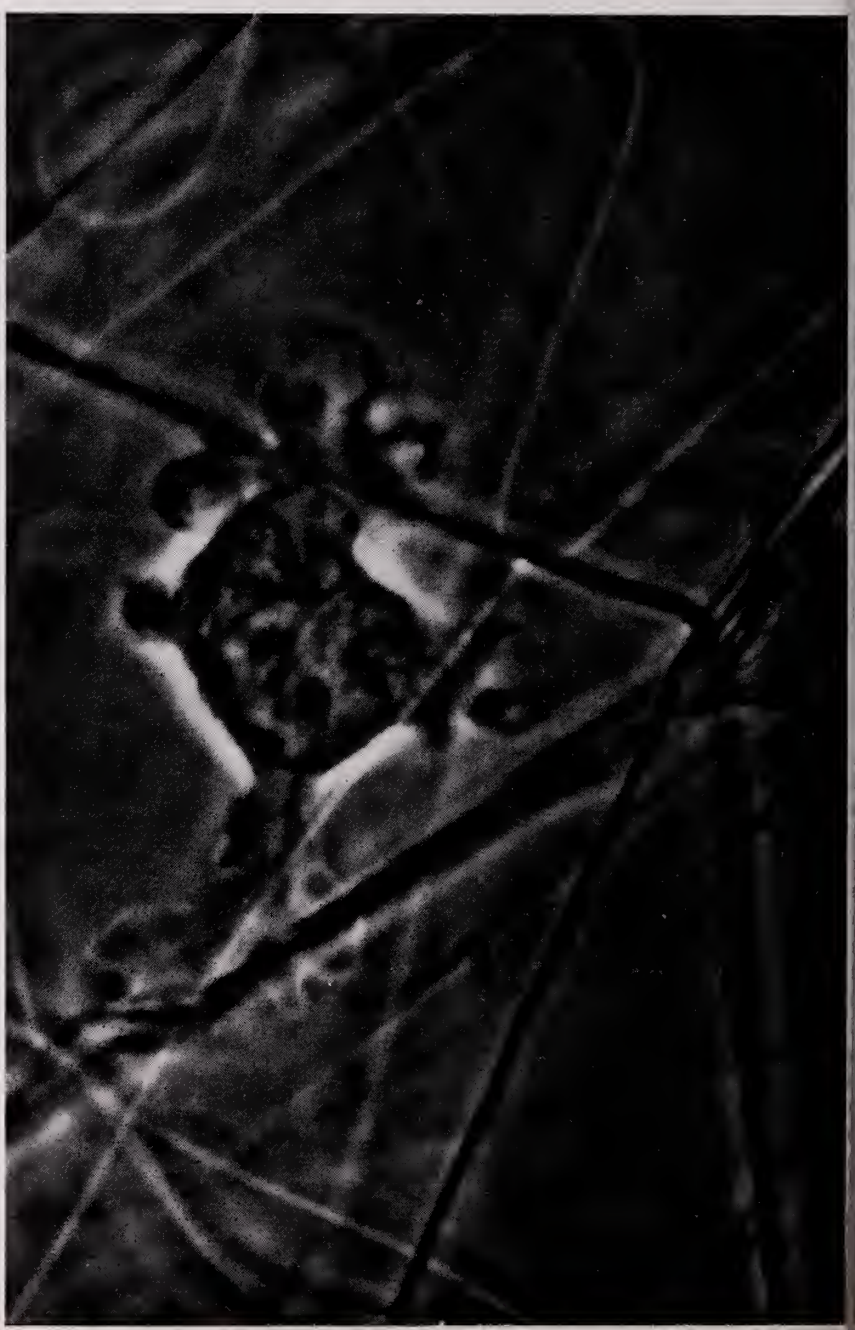
DOW **PITMAN-MOORE** Division of The Dow Chemical Company, Indianapolis

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

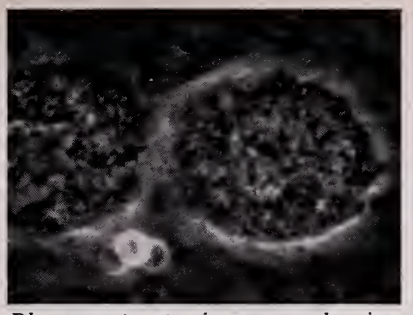


Visual evidence of how corticosteroids influence the inflammatory reaction

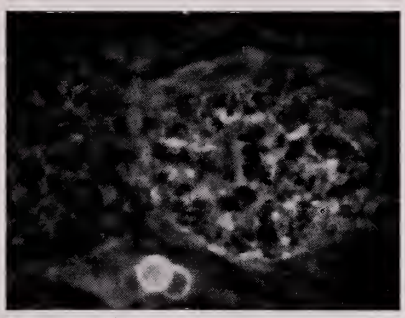
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



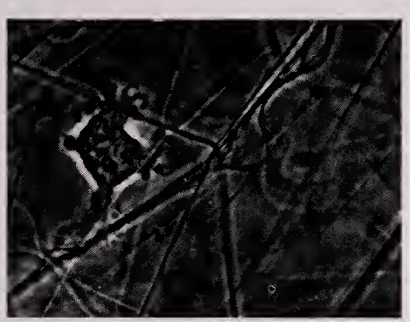
Phase-contrast microscopy showing mast cell before injury.



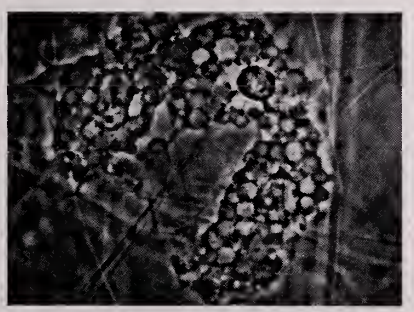
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.

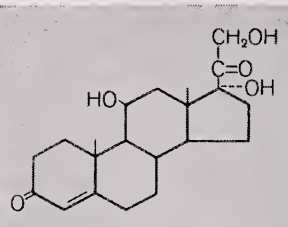
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

*A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

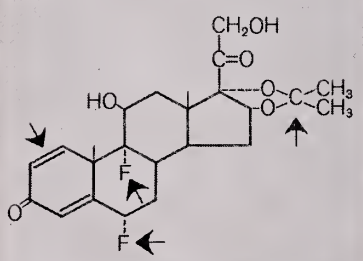
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

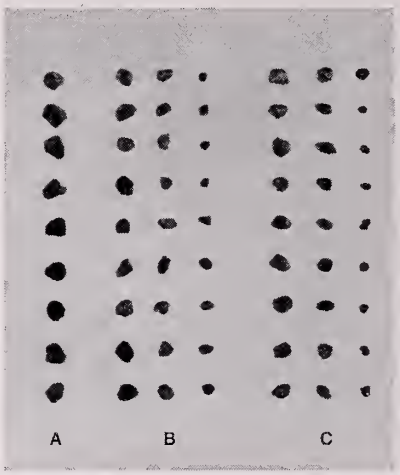


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B—injected with 1, 2 and 4 mg. of hydrocortisone—show progressively smaller thymuses as does Group C—injected with fluocinolone acetonide—but with only 1/500th the dose of hydrocortisone.

THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolone acetonide — an original steroid from

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For inflammatory dermatoses... by any measure a topical corticosteroid of choice

Synalar® (fluocinolone acetonide)

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Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards

Against these three major pathogens...

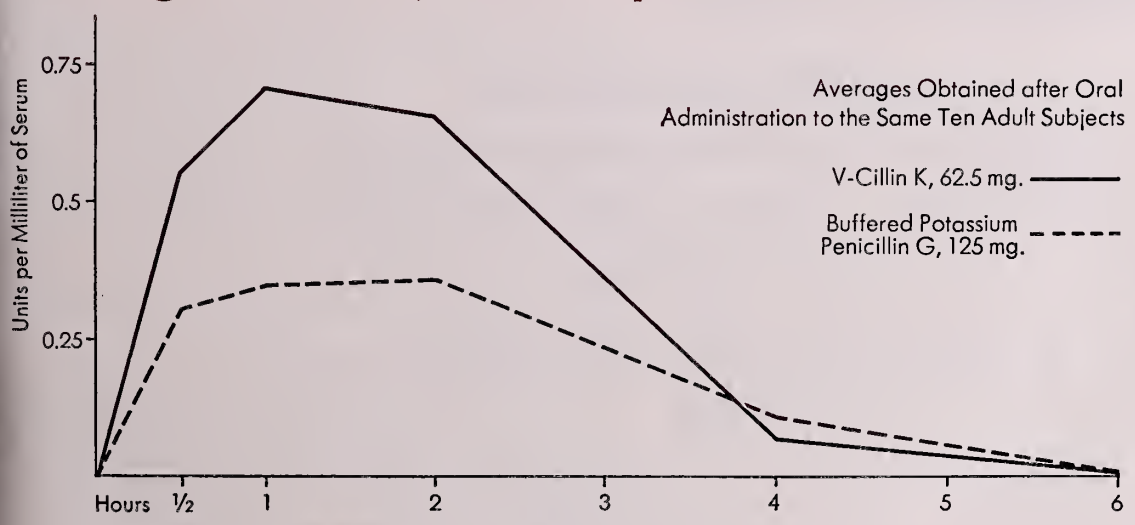
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph.Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med.,269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

V-Cillin K® Lilly 700867

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses

Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K hos been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth o pencillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much les common with administration of oral penicillin than with intramuscula forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a signif cant index of sensitization. The following hypersensitivity reaction associated with the use of penicillin have been reported: skin rashe ranging from maculopapular eruptions to exfoliative dermatitis; urt caria; and reactions resembling serum sickness, including chills, feve edema, arthralgia, and prostration. Severe and often fatal anaphylax has occurred (see Warnings). Hemolytic anemia, leukopenia, thron bocytopenia, and nephropathy are rarely observed side-effects an are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K Pediatric, the usual dosage ranges from 125 mg. (200,000 units) thre times a day to 500 mg. (800,000 units) every four hours. For infant the daily dosage may be 50 mg. per Kg. of body weight divided int three doses.

Beta-hemolytic streptococcus infections without associated ba teremia may be treated with 200,000 to 400,0000 units three times day. Therapy should be continued for a minimum of ten days to preve development of rheumatic fever and/or other serious complication Dosage for routine streptococcus prophylaxis in patients with a histo of rheumatic fever or congenital heart disease may be 200,000 uni once or twice daily. When such patients undergo tonsillectomy, too extraction, or other minor surgery, the prophylactic dose should 500,000 units every six hours given two days prior to surgery and f two days postoperatively. If oral medication is not feasible on the d of surgery, parenteral therapy should be considered. Mild to mode ately severe pneumococcus pneumonia has been treated effective with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be giv every six to eight hours in conjunction with indicated surgical proc dures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours three doses may be employed; in females, 500 mg. every four hou for six doses are recommended. Refractory infections generally respo to a second treatment three to four days following completion of t first. Treatment of gonorrhea with severe complications should individualized, with prolonged and intensive treatment. Patients with suspected lesion of syphilis should have a dark-field examination b fore receiving penicillin and monthly serologic tests for a minimum three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 m (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) p 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [0320

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

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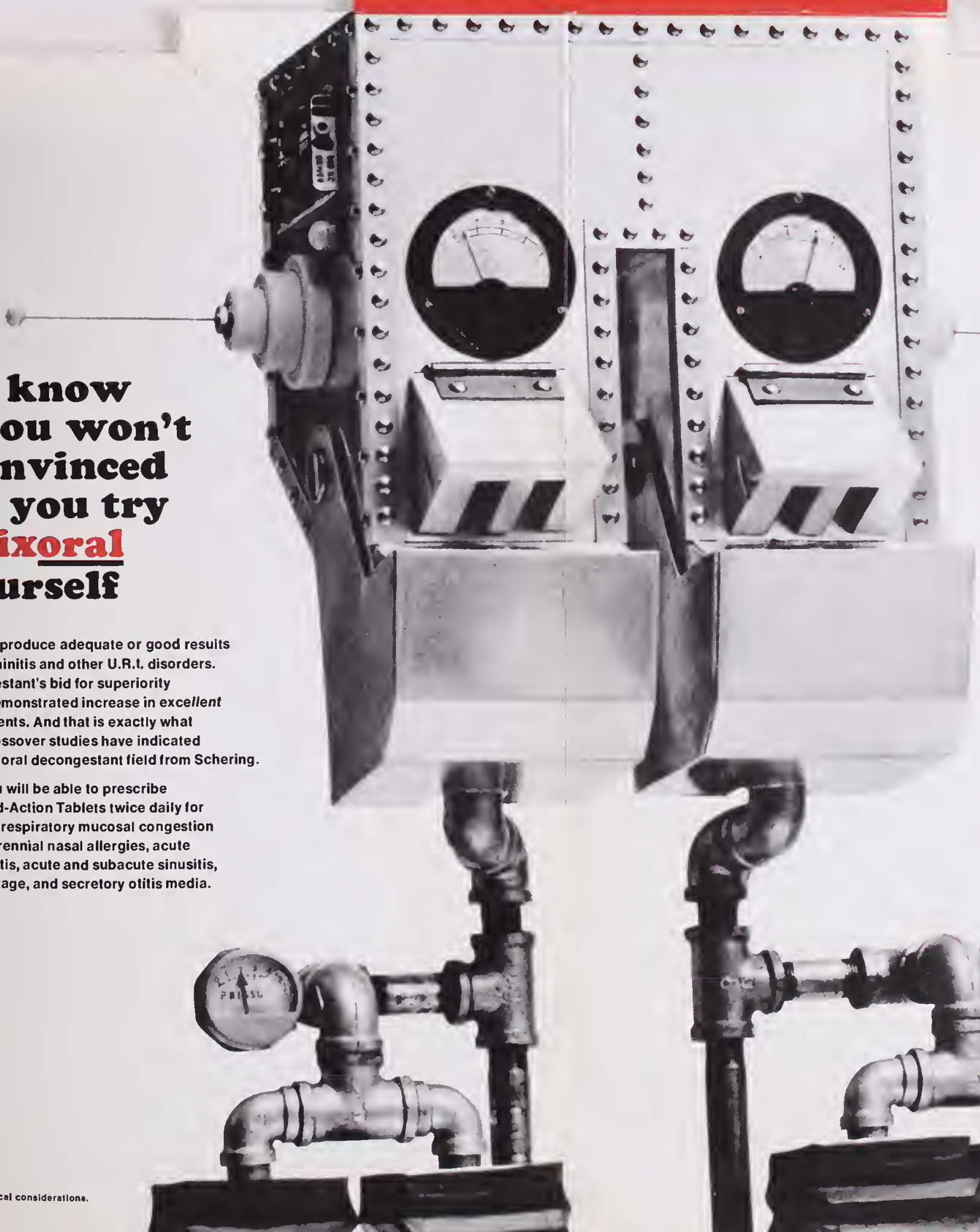
Most oral decongestants produce adequate or good results in most patients with rhinitis and other U.R.t. disorders. An oral decongestant's bid for superiority must be justified by a demonstrated increase in exc*ellent* results in *more* patients. And that is exactly what double-blind and crossover studies have indicated about a coming entry into the oral decongestant field from Schering.

Next month, you will be able to prescribe DRIXORAL Sustained-Action Tablets twice daily for 24-hour relief of upper respiratory mucosal congestion in seasonal and perennial nasal allergies, acute rhinitis and rhinosinusitis, acute and subacute sinusitis, eustachian tube blockage, and secretory otitis media.



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Sustained-Action Tablets
brand of dexbrompheniramine maleate and d-isoephedrine sulfate

Each tablet contains dexbrompheniramine maleate 6 mg., and d-isoephedrine sulfate 120 mg.

but you can try it sooner

More details on Drixoral and this mechanical man next month.

See last page of advertisement for clinical considerations.

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Schering introduces Drixoral™

Double-blind and crossover studies[1-3] show superior results with an oral decongestant, but...

See last page of advertisement for clinical considerations.

see previous page

for special pre-introductory sample offer for New Drixoral™

Sustained-Action Tablets
brand of dexbrompheniramine maleate and d-isoephedrine sulfate

Each tablet contains dexbrompheniramine maleate 6 mg., and d-isoephedrine sulfate 120 mg.

Clinical considerations: Contreindications—DRIXORAL should not be given to children under 12 years of age. Until animal studies support the safety of this preparation for use during gestation, DRIXDRAL should not be administered to pregnant women. *Precautions*—Although isoephedrine causes practically no prassor effect in normotensive individuals, it should be used with caution in patients with hypertension, coronary artery disease and hyperthyroidism. Dexbrompheniramine maleate may cause infrequent and usually mild drowsiness; should this occur, the patient should not engage in mechanical operations that require alertness. *Side effects*—Mild drowsineaa has been observed in occasional patients receiving DRIXDRAL. Although very infrequent complaints suggestive of sympathomimetic side effects have been noted, possible side effects of sympathomimatic origin include anxiety, tension, restlessnesa, nervousness, tremor, weakness, insomnia, headacha, palpitation, tachycardia, angina, alevation of blood pressure, swaating, mydriasis, anorexia, nausea, vomiting, dizziness, constipation, and dysuria due to vesical aphincter spasm. For more complete datails, consult package insert or Scharing literatura availeble from your Schering Repraaentative or Medical Services Departmant, Union, New Jersey 07083.

Relerances:
1. Pullen, F. W. 2nd, and Montgomary, W. W.: Arch. Dtolaryng. 77:24, 1963.
2. Frank, D. t.: Curr. Therap. Res. 6:158, 1964.
3. Fierberg, A. A.: Ann. Allergy 22:324, 1964.

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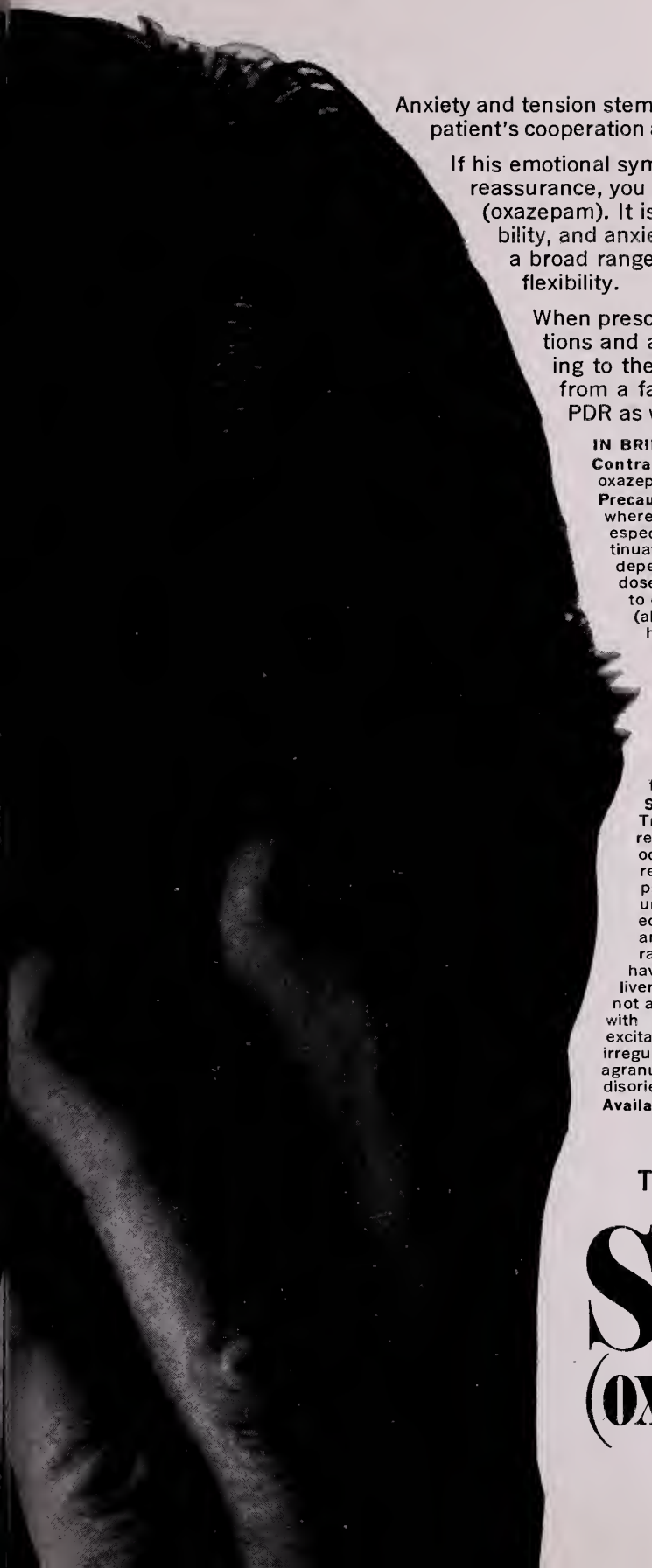

Anxiety and tension stemming from organic illness may undermine your patient's cooperation and possibly retard success of primary therapy.

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When prescribing, carefully observe dosage recommendations and appropriate precautions, especially as pertaining to the elderly and when complications could ensue from a fall in blood pressure. (See Wyeth literature or PDR as well as "IN BRIEF" below.)

IN BRIEF.

Contraindications: History of previous hypersensitivity to oxazepam. Oxazepam is not indicated in psychoses.

Precautions: Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. Withdrawal symptoms upon discontinuation have been noted in some patients exhibiting drug dependence through chronic overdose. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive, prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Withdrawal symptoms following abrupt discontinuance are similar to those seen with barbiturates. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

Not indicated in children under 6 years; absolute dosage for 6- to 12-year-olds not established.

Side Effects: Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (morbilliform, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leucopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age. These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever and euphoria.

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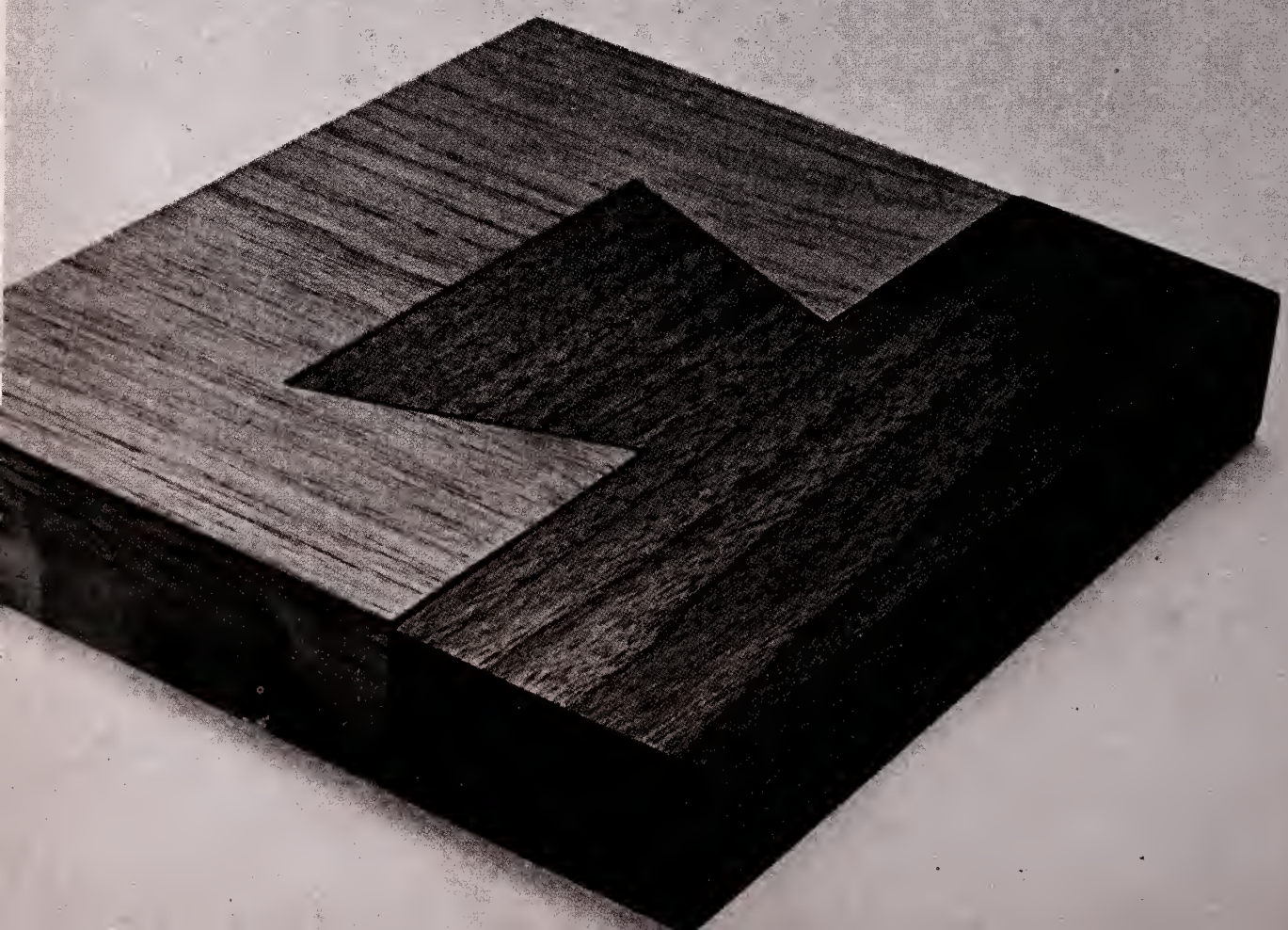

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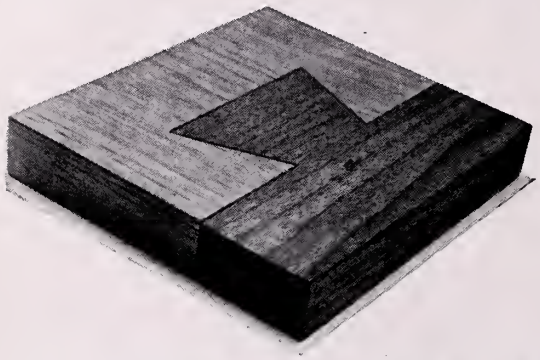

INDICATIONS: Mild to moderate hypertension, especially when complicated by anxiety, tachycardia, or edema.

SIDE EFFECTS AND PRECAUTIONARY MEASURES

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Occasional side effects: lassitude, drowsiness, nasal congestion, looseness of stools, increased frequency of defecation. Rare side effects: anorexia, headache, bizarre dreams, nausea, dizziness, skin rash.

Severe mental depression has appeared in a small percentage of patients, primarily in a dosage above 1 mg daily. When the drug is discontinued, depression usually disappears, but hospitalization and shock therapy are sometimes required.

Caution: Withdraw reserpine 2 weeks before surgery, if possible. For emergency surgical procedures, give vagal blocking agents parenterally to prevent or reverse hypotension and/or bradycardia.

Because reserpine may increase gastric secretion of hydrochloric acid, use cautiously in patients with peptic ulcer.

Use cautiously with digitalis, quinidine, or guanethidine. Not recommended for aortic insufficiency.

Esidrix® (hydrochlorothiazide CIBA)
Contraindictions: Oliguria, renal shutdown, progressive hepatic disease, and allergy to thiazides.

Warnings: Stenosis, hemorrhage, and ulceration of the small bowel have occurred with coated potassium tablets. Discontinue such medication when used with Esidrix if gastrointestinal disturbances arise.

Pay special attention to electrolyte balance of patients with severe renal or hepatic insufficiency. In patients with cirrhosis and ascites, watch for symptoms of impending hepatic coma. Thiazides may decrease glucose tolerance; use cautiously in diabetics. Hyperuricemia may occur but is readily reversed by a uricosuric agent. Lowering of blood pressure may sometimes result in nitrogen retention, particularly in patients with impaired renal function. Dosage titration is necessary in such patients.

Precautions: Watch for signs of fluid or electrolyte imbalance. Further electrolyte depletion may cause hypochloremic alkalosis and hypokalemia. Since the latter may precipitate digitalis intoxication, watch carefully patients who are taking digitalis or its glycosides or those with cardiac arrhythmias. In severe hypokalemia, large oral or intravenous doses of potassium may be required.

A few infants born of mothers who received thiazides during pregnancy have shown bone marrow depression with thrombocytopenia. Hydrochlorothiazide decreases responsiveness to exogenous norepinephrine and increases responsiveness to tubocurarine. Hypotensive episodes under anesthesia have been observed in some patients receiving thiazides.

Side Effects: In addition to those above, nausea, anorexia, headache, restlessness, constipation, dizziness, paresthesias, fatigue, increased sweating, cramps in arms and legs, diarrhea, abdominal pain. Rare reactions: purpura with or without thrombocytopenia, skin rash, photosensitivity, urticaria. Sometimes associated with hydrochlorothiazide: leukopenia, agranulocytosis, aplastic anemia, pancreatitis, jaundice, necrotizing vasculitis.

DOSAGE
Average dosage is 2 *Tablets #2* daily. For patients requiring less hydrochlorothiazide, substitute *Tablets #1*. For maintenance, reduce dosage to lowest effective level. When necessary, more potent antihypertensive agents may be added gradually in reduced dosages.

SUPPLIED
Tablets #2 (light orange), each containing 0.1 mg reserpine and 50 mg hydrochlorothiazide; bottles of 100 and 1000. *Tablets #1* (light orange), each containing 0.1 mg reserpine and 25 mg hydrochlorothiazide; bottles of 100 and 1000.

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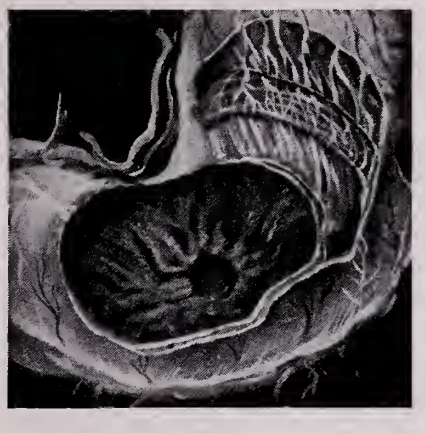

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Twenty-twenty Hindsight!

During our profession's many months of waging war against the gathering storms of governmental medicine, we occasionally mentioned that its pattern was cast long ago in the Old World. All we have to do to predict the social, economic, and political trends in the New World is to scrutinize what has taken place in the countries of our forebearers. Everything has evolved, it seems, except human personality. Socialized medicine in other countries has been studied and its experience recorded, but we have been guided and misguided into the same trap. England's panel system was analyzed and the findings made available for all who would care to profit by their experiences. More recently, we do not need to look across the seas, for it is all now close to home in our northern neighbor, Canada, and in our own country.

Papers and symposia have appeared on the programs of many of our general and specialty medical and surgical organizations. A symposium on Medical Economics in Canada was presented on the program of the American Association of Plastic Surgeons at its 46th Annual Meeting in Toronto last May. A number of Canadian colleagues are members of this organization and were its hosts for 1967. Participants in the symposium were B. E. Freamo, General Secretary of the Canadian Medical Association; C. A. Naylor, an actuary of London, Ontario; Dr. R. Kenneth Thomson, President of the Canadian Medical Association; and Dr. Raymond Robillard, President of the Federation of Medical Specialists of Quebec. It was interesting to note how the problems of the health services in Canada are parallel to our own. They have agreed that health is a provincial responsibility, the provinces being comparable to our states. The government pays for approximately half of Canadian medical care, and the provinces cannot afford to ignore it, but the government calls the tune. The majority of our Canadian colleagues feel, as do American physicians, that they should not need governmental subsidy. At the end of 1965, three-fourths of their population were covered privately, and about 12 per cent of its cost went to administration—far different from the present situation. Canadian actuaries believe that co-insurance in cooperation with the government is probably best for all concerned and that it should be available and maintained for all of the provinces which wish it, and on a voluntary basis. The private insurance carriers are left only a limited and almost non-competitive area in which to survive. Their initiative and sense of responsibility are practically gone. Any doctor can walk out of the governmental plan, and some have done so. It is their belief that the government is interested only primarily in controlling the cost, but not the quality, of medical care. Governmental ears have heard the doctors, particularly in the great province of Quebec, but the fundamental trends of governmental care do not appear to have been significantly altered thereby.

More recently, local newspapers in our area carried an article entitled "Medicare Scheme Assailed." It stated "An insurance company executive feels that Canada's proposed medicare plan will be an 'expensive mistake'." G. N. Watson, vice president and director of group insurance for the Crown Life Insurance Company of Toronto made this statement before the Canadian Health Insurance Association. He stated that the federal plan is no more than an adaptation of European plans twenty years or more of age and already out of date, and discredited for having failed to do as they

had planned and promised. Mr. Watson predicts that within five years an increasing number of Canadians will be dissatisfied, as in their mother country, with the long waiting periods for consultation and treatment. Apparently Canadians will be looking more and more, as we are now, at governmental welfare spending. They will be demanding that benefits of the programs must be made to exceed the costs. One of the speakers believes that his countrymen will recurrently ask "was this expensive trip really necessary".

We physicians and our hospitals are wrestling with Medicare, employing people who try to understand it while attempting to appease the elder citizens in their bewilderment. With them, most of us wonder why, as a profession, our efforts were too little and too late to spare America a ride down the same bumpy road.

Atrophy of the Senses

A FEW YEARS AGO one of our editorials was entitled "Over-utilization of Services"—Not that we expected to reverse the picture, but at least there was reason to hope that the extravagant trend would level off. Hospitals have taken steps to reduce the average length of hospital stays and to curtail the use of expensive drugs. Nothing has controlled the mounting costs, and they are rising beyond consistency with salaries and supplies.

One controllable factor is over-use of tests, tests, and more tests. X-ray and laboratory facilities are invoked first—and, all too often, the five senses last! This is particularly conspicuous where resident physicians are at liberty to order up the works with or without the sanction and consent of attending men. The practice is particularly noted in tax-supported institutions and without the "brakes" of private practice guarding our patients' purse-strings and, to a reasonable extent, defending the insurance carriers. Blood cultures, urine cultures, chest x-rays, microscopic study of unquestionably benign tissues upon simple and self-limited clinical entities, plus many unnecessary treatments add up to untold thousands of dollars in medical and hospital charges.

Astute physical diagnosis, with full use of the clinicians' five senses, appears to be passe. It is easier, quicker—and a lot more expensive—to order up the tests first instead of using them to confirm or deny what thorough history and physical examinations are still capable of disclosing. Fortunately, the natural state of the body is to be well. And so it will be, though the modern and expensive trend is fostering atrophy of disuse of the five senses among many contemporary scientifically trained people. It isn't limited to our profession.

Gasoline Additives and Smog

AN observing colleague noted, several months ago, two editorials in a California newspaper concerning smog. One stated, "We have yet to find the most feasible method of essential control of this menace to health." The other said that smog may be caused by additives in gasoline. Boron, lead, and phosophorous are examples. The doctor agrees that emphysema, cancer of the lung and other diseases, rare twenty and more years ago, need more study to rule this possibility in or out. If the additives were left out, about all we'd miss would be flashy performance. We could get around without tigers in our tanks! Also, why not quit acting like tigers on the road and save more people.

Another thought occurs—electricity, clean and silent. Possible, indeed, and it's already on the drawing boards. And some of our youngsters may live to see cars delivered with atomic capsules to propel them through a normal car life-span. Most of us would gladly give up our share of the moon to see a few billions spent on constructive things such as peaceful use of atomic energy and feeding hungry people!

Cardiac arrhythmias with thyrotoxicosis*

J. E. Goss,** MD, Carlton L. Shmock, MD, Ray Pryor, MD, and S. Gilbert Blount, Jr., MD, Denver

Review of 128 patients is basis of study of incidence, etiology, and treatment of cardiac arrhythmias in thyrotoxicosis.

ARRHYTHMIAS are the most common complication of thyrotoxicosis. In 1938, Ernstene[1] reported that 22 per cent of his large series of thyrotoxic patients had arrhythmias. More recently, Rosenblum and Delman[2] reported an incidence of 23 per cent. In both studies atrial fibrillation was the predominant arrhythmia. Since the lag period between the institution of antithyroid therapy and the euthyroid state is prolonged, the control of atrial fibrillation in many instances may create a problem.

This study consists of a review of our experience with arrhythmias in thyrotoxic patients over a ten-year period. Our findings will be compared with those of other authors,[1-7] and some pertinent therapeutic problems will be discussed.

Materials and methods

The records of all patients with the diagnosis of thyrotoxicosis from the University of Colorado Medical Center and Denver Veterans Administration Hospital between January, 1954 and June, 1964 were evaluated. From this group were selected the patients who had laboratory confirmation of thyrotoxicosis and who were untreated prior to being seen at our center.

One hundred and twenty-eight patients were selected for study; of these, 92 were at the University of Colorado Medical Center and 36 at the Denver Veterans Administration Hospital. Fifty-seven per cent of the group were females and 43 per cent males. Of those manifesting arrhythmias 64 per cent were males. The average patient age was 39 years, while those having arrhythmias had an average age of 54 years.

Associated cardiac disease was diagnosed when the etiologic criteria of the New York Association were met.[8] Of the 22 patients with cardiac arrhythmias five had associated organic heart disease. The other 17 patients (77 per cent) were placed in a group in which no apparent associated cardiac disease could be found to help explain the presence of the arrhythmia; therefore it is implied that the arrhythmias were primarily due to the effects of the thyrotoxicosis. However, this does not mean that occult degenerative changes may not play a role in the pathogenesis of arrhythmias in thyrotoxicosis.

Results

Twenty-four arrhythmias were noted in 22 patients (Table 1). As expected, atrial fibrillation was the most common arrhythmia, being present in 20 (16 per cent) of the patients. It was paroxysmal in four patients

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and persistent in the other sixteen. Congestive heart failure accompanied the atrial fibrillation in 9 patients. Associated cardiac disease was apparent in only four of the 20 patients with atrial fibrillation.

TABLE 1
Cardiac Arrhythmias Associated with Thyrotoxicosis

Arrhythmia	*No. of Arrhythmias*	*Associated CHF*	*Associated Organic Heart Disease*
Atrial fibrillation	20 (16%)	9	4
Atrial flutter	2 (2%)	2	0
Paroxysmal atrial tachycardia	1	1	0
Paroxysmal nodal tachycardia	1	0	1

Atrial flutter was present in two patients, both of whom were in congestive heart failure (Table 1). With digitalization both converted to atrial fibrillation and finally with control of the thyrotoxicosis both reverted to a sinus rhythm.

Paroxysmal nodal tachycardia was observed in a 43-year-old male. No element of congestive heart failure was evident. Coronary artery disease was probably a contributing factor, for he had an inferior myocardial infarction 34 months after first being seen with thyrotoxicosis. He was euthyroid at the time of the myocardial infarction. A severely thyrotoxic 82-year-old female presented with paroxysmal atrial tachycardia and moderately severe congestive heart failure (Table 1).

Discussion

Atrial fibrillation is the most common arrhythmia associated with thyrotoxicosis. As early as 1933, Rosenblum[9] had shown that hyperthyroid rabbits had an increased sensitivity to epinephrine. He was able to produce atrial fibrillation in these animals with amounts of epinephrine insufficient to cause any effect on the rhythm of these same animals when euthyroid. Atrial fibrillation has also been observed to occur with paroxysms of active pheochromacytomas.[10] Other cardiovascular manifestations of thyrotoxicosis, such as increased heart rate, systemic blood pressure, cardiac output, and cardiac work, have been explained by augmentation of catecholamine activity.[11-14] The potentiation of the catecholamine effect, which has been postulated to explain other cardiovascular manifestations of thyrotoxicosis, may also be a possible explanation for the production of atrial fibrillation and other arrhythmias.

Since the incidence of atrial fibrillation increases with age,[4, 15] it is thought by some observers[22] that this arrhythmia would not be present in thyrotoxicosis were it not for the presence of underlying myocardial degenerative disease. In a series of 635 patients with thyrotoxicosis grouped by decade, there were no cases of atrial fibrillation until the third decade when the incidence was three per cent. In each following decade there was an increased incidence until the eighth decade in which approximately 50 per cent of the patients had atrial fibrillation.[15] The age incidence in our group was quite similar, for there was a four per cent incidence in the third decade with a steady increase to the seventh decade where 47 per cent of the patients had atrial fibrillation (Table 2).

TABLE 2
Age Incidence of Atrial Fibrillation in Thyrotoxicosis

Years of Age	*No. of Cases*	*Cases with Atrial Fibrillation*	*Associated CHF*
10-19	14	0	0
20-29	25	1 (4%)	0
30-39	27	2 (7%)	0
40-49	29	5 (17%)	1 (20%)
50-59	15	4 (27%)	2 (50%)
60-69	15	7 (47%)	5 (71%)
70-79	1	1	1
80-89	1	0	0

The incidence of atrial fibrillation in thyrotoxicosis varies from 7 to 22 per cent (Table 3) with the average being about 14 per cent. Paroxysmal atrial fibrillation has been reported to occur in from 2.8[17] to 11 per cent[15] of cases while the persistent form is present in 5.2[17] to 6 per cent.[15] Our overall incidence was 16 per cent with 3 per cent being paroxysmal and 13 per cent persistent.

Other cardiac arrhythmias are rarely associated with thyrotoxicosis, but cases of atrial flutter,[1, 2] paroxysmal atrial tachycardia,[1, 2] ventricular tachycardia,[1, 18] and paroxysmal ventricular fibrillation[19] have been reported (Table 3).

TABLE 3

Summary of Cardiac Arrhythmias in Thyrotoxicosis

Series	No. of Patients with Thyrotoxicosis	Atrial Fibrillation	Atrial Flutter	Atrial Tachycardia	Ventricular Tachycardia
Silver	1603	(15%)	0	0	0
Ernstene	1000	207 (21%)	2	5	2
Griswald	810	72 (9%)			
Sandler	462	84 (18%)	0	0	0
Levine	409	59 (14%)	0	0	0
Rosenblum	201	45 (22%)	1	1	0
Summer	200	18 (9%)	0	0	0
Goss	128	20 (16%)	2	1	0

Sandler[4] using I^{131} and Ernstene[1] using thyroidectomy found that after therapy about one-third of the patients with persistent atrial fibrillation reverted to sinus rhythm while Griswald and Keating[5] reported spontaneous reversion of 53 per cent of their patients with persistent atrial fibrillation following antithyroid therapy. Six (38 per cent) of our patients with persistent atrial fibrillation spontaneously reverted to a sinus mechanism with antithyroid therapy, and three (19 per cent) were converted with quinidine when euthyroid.

The control of atrial fibrillation in thyrotoxicosis frequently represents a therapeutic challenge. The first step in controlling atrial fibrillation in the thyrotoxic patient is digitalization. However, digitalis is often unsuccessful in adequately controlling the ventricular response even when administered to toxicity.[20-23] Since there is a lag period before antithyroid therapy alone will bring thyrotoxic atrial fibrillation under control or into spontaneous conversion, supplementary means are often necessary. It would appear that DC countershock conversion of atrial fibrillation would be an ideal way of promptly controlling the thyrotoxic patient who responds poorly to digitalis, but in our limited experience DC countershock conversion was unsuccessful in the patient who was inadequately controlled by antithyroid therapy.

Direct current countershock conversion was attempted in two thyrotoxic patients with atrial fibrillation. We were unable to convert a 44-year-old male after three successive DC shocks up to 400 watt seconds. Further antithyroid therapy was given and DC countershock conversion was again attempted when he appeared clinically euthyroid, but again he failed to convert. Thyroid function tests were repeated and still showed mild hyperactivity. The second patient, a 53-year-old female, entered the hospital with uncontrolled atrial fibrillation and congestive heart failure. Digitalization failed to control her ventricular response. DC countershock was attempted and she converted with the second shock of 150 watt seconds, in spite of quinidine she reverted back to atrial fibrillation three days later. Persistent rapid ventricular response was controlled with reserpine. After she became euthyroid she converted with one shock of 100 watt seconds to a normal sinus rhythm, which has persisted for more than a year.

Since DC countershock conversion appears to be successful only after the euthyroid state is attained, there is need for other supplemental means to control atrial fibrillation during the period before euthyroidism is achieved. Adrenergic blocking agents seem to provide the most successful approach to prompt control of cardiovascular manifestations in the thyrotoxic patient. The administration of parenteral guanethidine in doses of over 1.0 mg/kg to patients with untreated thyrotoxicosis produced a significant decrease in heart rate, blood pressure, cardiac index, and left ventricular work. The mechanism responsible for the hemodynamic changes was thought to be a depletion of the myocardial catecholamine content as well as blocking the sympathetic discharge to the heart.[14] We have noted, as have Frye and Braunwald,[24] that in thyrotoxic patients reserpine reduces the rate of ventricular response in atrial fibrillation which is inadequately controlled by digitalis. This augmented effect is probably due to the reduction in myocardial tissue stores of catecholamines[24] as well as blocking sympathetic stimulation of the heart,[25] thus allowing digitalis to more effectively depress AV conduction.

Summary

The records of 128 patients with thyrotoxicosis were reviewed. Twenty-four cardiac arrhythmias occurred in 22 patients (17 per

cent). Atrial fibrillation was the most common arrhythmia occurring in 20 patients (16 per cent); it was paroxysmal in 3 per cent and persistent in 13 per cent. Congestive heart failure was present in nine patients. With antithyroid therapy six patients (38 per cent) with persistent atrial fibrillation spontaneously converted to a sinus rhythm. Atrial flutter was present in two patients, with paroxysmal atrial tachycardia and paroxysmal nodal tachycardia each present in one patient.

Limited experience with DC countershock suggests that it is effective in atrial fibrillation only after the euthyroid state is attained. Adrenergic blocking agents as guanethidine, therefore, seem to provide the most prompt control of thyrotoxic atrial fibrillation when digitalis fails to control the ventricular response. •

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KEYWORDS—Thyrotoxicosis, cardiac arrhythmias, direct current countershock.

Injuries to the fingertips

Treatment with cross finger flaps

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SEVERAL MILLION injuries to the hand occur each year in industry and at home, and the tips of the fingers are involved in most of the reportable injuries. The majority of these injuries are simple lacerations or mild crush injuries which respond satisfactorily to minor repair or dressings and heal without deformity and with minimal time off work. The problem in treatment of finger tips occurs, however, when a patient loses the soft tissue leaving insufficient skin for primary closure and exposure of bone or tendon. Under these conditions there are several choices for reconstruction of the finger tip. The choice of repair will depend a great deal upon the individual circumstances involved, such as type of injury, cleanliness of the injury, condition of the underlying bone and tendon, age of the patient, length of time since injury, type of work the patient does, and the general condition of the patient in regard to other injuries. The following types of repair may be considered: (1) shortening of the bone and primary skin closure, (2) split thickness skin graft, (3) full thickness skin graft, (4) pedicle flaps from a distant site, (5) palmar flaps, (6) island flaps, (7) cross finger flaps. Some of the indications for each of the various types of treatment are as follows:

1. *Shortening of the bone and primary skin closure.* This type of repair is most frequently used where the accident has resulted in partial amputation of a finger tip and additional shortening will not be detrimental to the finger. For instance, in an amputation through the distal interphalangeal joint, the head of the middle phalanx will be bulbous if left intact. Trimming of the end of the middle phalanx will frequently allow sufficient soft tissue for primary closure as well as improve the cosmetic result, and this is the treatment of choice. In some cases pedicle flaps of skin may remain following an injury and mild recession of the bone will allow utilization of these flaps for primary closure without tension. Amputation of the tip of the finger through the nail bed should usually not be treated by additional shortening of the finger and an alternative method of repair is indicated, since shortening of the bone will necessitate total removal of the distal phalanx and significantly shorten the finger. Occasionally a working man with this type of injury in a non-dominant finger will request amputation at a more proximal level since this will restore him to work sooner than with any other type of repair.

2. *Skin grafts.* Split thickness or full thickness skin grafts have a definite place in treatment of finger tip injuries.[1, 2] In an injury which has resulted in loss of skin alone, leaving a good, fat pad intact over the bone and tendon, a skin graft is the treatment of choice. In primary injuries which are clean, it is our preference to use a full thickness skin graft taken from the forearm or groin. In contaminated wounds or injuries which are seen several days after they have occurred, split thickness skin grafts are the treatment of choice. After converting the wound to a closed wound by means of a split thickness skin graft, full thickness skin grafting may be considered as a secondary stage. Skin grafts take very well on finger tips and hold up under trauma without pain or discomfort as long as there is adequate subcutaneous coverage over the tendon and bone.

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Skin grafts placed over the distal phalanx without adequate subcutaneous tissue covering will also frequently take nicely but the end result will be poor as far as function is concerned, because these patients will complain of painful, cold finger tips. The skin-grafted finger will be bypassed whenever possible and will not be used to grasp, pinch, or pick up objects.

Patients frequently bring amputated parts of fingers or finger tips into the emergency room with them, and our general success with replacing these amputated parts has been poor. We have never been able to replace a composite amputated digit and have it survive. In cases where skin has been avulsed by a sharp object, replacement of the skin alone after defatting as a full thickness skin graft has been gratifying in many instances. If this procedure is successful, cosmetic and functional end results will be more satisfactory than skin grafts taken from other sources of the body.

3. *Pedicle flaps from a distance.* Pedicle flaps from a distance are rarely used in reconstructive surgery of finger tips alone. This type of repair is used when more extensive reconstruction of a digit is required. Alternate methods of repair can usually be used which will result in better coverage to the finger tips since abdominal skin, which is the usual donor site, is so dissimilar to the skin of the fingers. Abdominal pedicles tend to be bulky on a finger tip. These flaps will necessitate secondary defatting procedures or total removal of skin and redundant subcutaneous tissue and free skin grafting on the remaining subcutaneous fatty layer.

4. *Palmar flaps.* In our hands, palmar flaps are reserved for small areas of loss over the distal tips of the finger only.[3] The donor area in the palm may need to be resurfaced with a skin graft, and this donor area is frequently the site of postoperative discomfort. The source of the pedicle graft is limited, and larger areas of loss of the finger tips need more skin coverage than can be sacrificed with impunity from the palm.

5. *Island flaps.* In our experience island flaps have been reserved for use in delayed reconstructive procedures to restore sensation to the vital pinch areas of the index finger or thumb. The donor area has generally been the ulnar side of the ring finger, lifted on its neurovascular bundle, and transferred to the thumb or index finger. The idea has intrigued us that this treatment might be used in an acute injury involving the thumb or index finger, but as yet we have not employed this technic.

6. *Cross finger flaps.* An injury to the finger tip which results in loss of soft tissue with exposure of bone and/or tendon is most easily treated by the use of a cross finger flap.[4, 5] This flap is based on the dorsal surface of the adjacent finger and is rotated 180° to fit into the palmar or tip of the involved finger. Variations of this technic can be used to fit different areas of loss and can be used to resurface extensor injuries on adjacent fingers. This horizontally based flap maintains excellent blood supply and, in our hands, we have yet to see a failure in this type of repair. Due care must be exercised in planning the flap to insure proper size and angulation of the flap in fitting into the proposed defect. The operation is carried out in a bloodless field by the use of a tourniquet. The outline of the flap is carefully made with brilliant green. Dissection is made in the level beneath the dorsal veins of the finger and on top of the areolar layer covering the extensor tendon. The level of this dissection is extremely important in maintaining viability of the flap and also to insure adequate soft tissue coverage when the flap is moved (Fig. 1).

Fig. 1. First step in cross finger flap.

After elevating the flap it is rotated into position to test the fit into the defect. When the dissection is adequate the tourniquet is released and the bleeding controlled. Either a full thickness graft from the forearm or groin or a split thickness skin graft from the arm or abdomen is taken and applied to the donor area on the dorsum of the finger. The graft is sutured into place with 6-0 black silk sutures tied over a stent dressing. The cross finger flap is then sutured into the defect in the involved finger with 5-0 or 6-0 dermalon sutures. A dressing is applied reinforced with a plaster splint. The sutures are removed from the fingers in 12 to 14 days, and the flap is divided and set in at a separate procedure at 21 days. Depending upon the patient's occupation he can return to work 7 to 14 days following the set-in procedure.

During the past four years we have treated 42 finger tip injuries with cross finger flaps. In two of these cases, two fingers on one hand were treated with cross finger flaps simultaneously. It is of interest to note that the majority of these injuries occurred below age 50 with the greatest number being in the below 30 age group (Table 1). There were 34 males and 6 females in the series with 17 injuries being sustained while at work and 23 injuries at home or in some form of recreation. The thumb was involved in three injuries; the index finger, 13; middle finger, 12; ring finger, 5; and fifth finger, 9 (Table 2). All of these patients so treated had good results from the use of the cross finger flap with restoration of skin of relatively normal consistency and thickness for the hand (Figs. 2 and 3). Sensation is slow to return in these flaps, but none of our cases have complained because of lack of sensation. In the older age groups, there is some mild disability due to joint stiffness which develops incident to holding the fingers in the necessary position to allow the transfer of the flap; however, this has not been a sufficient problem to warrant some other form of treatment.

TABLE 1

AGES	10–20	7
	20–30	10
	30–40	4
	40–50	6
	50–60	5
	60–70	2
	70 →	1

TABLE 2

THUMB	3
INDEX	13
MIDDLE	13
RING	6
FIFTH	9

Fig. 2. Typical indication for cross finger flap.

Fig. 3. Excellent functional and cosmetic result is predictable.

Summary

The treatment of finger tip injuries has been outlined. Cross finger flaps have been used by us in 42 cases in the past four years without significant difficulty in any case. This type of skin coverage is recommended in any case of finger tip skin loss wherein flap coverage is deemed necessary.

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Automated biochemical screening

*A study of the hospitalized patient**

Arthur W. Gottmann, MD, and Herbert N. Jordan, MS, Pueblo

Preliminary results substantiate practicality and usefulness of this screening of hospitalized patients.

FOR ALMOST A YEAR, we have been providing the physicians in our 480-bed general hospital with the opportunity of ordering, as a group, seven frequently requested biochemical tests at a significantly reduced cost to the patient. The group of tests were ordered, when desired, by the attending physician, and paid for by the patient. We have summarized our results and experience over an eight month period to provide the basis for a discussion of the "Biochemical Screening" concept.

Other investigators,[1, 2, 3] in medical schools and in private practice, have indicated that a considerable number of unexpected biochemical abnormalities can be uncovered when multiple testing is done. We wished to see if worthwhile information would also accrue from a similar approach when used under routine hospital circumstances. Would patient variables, such as age, sex, disease process, or therapy make a single battery of tests unfeasible? Also would deletion of some of the tests included and addition of others give the group greater significance?

Materials and methods

Biochemical screening tests have been performed at request of the physician on theoretically fasting, hospitalized patients. The eight-month period of this study extended from April 1, 1966, through November 30, 1966. The total number of patients on whom tests were performed was 998, constituting approximately 10 per cent of patients admitted to the hospital during the period. During the first month of the study, 71 patients were screened, and in the month of November 184 patients were screened. Most of the patients screened were admitted to the medical and surgical services.

The seven tests included the urea nitrogen (BUN), glucose, uric acid, serum glutamic-oxaloacetic transaminase (SGOT), total bilirubin, alkaline phosphatase, and creatinine. These were performed on "Auto-analyzers" using the Technicon Corporation's suggested N-methodologies.[4] Specifically, the BUN was adapted from Skeggs, the glucose from Hoffman, the uric acid and creatinine from Hawk, the SGOT from Levine, the bilirubin from Jendrassik and Grof and the alkaline phosphatase from Marsh. Table 1 gives the range of values which we call "normal" in this study. A series of 200 "normal" hospital employees were used to check the validity of these values.

TABLE 1

"Normal Values"

Test	*Value*
Urea Nitrogen	8-20 mgm./100 ml. of serum
Glucose	65-110 mgm./100 ml. of serum
Uric Acid	
Female	2.0-7.1 mgm./100 ml. of serum
Male	3.8-8.2 mgm./100 ml. of serum
Serum Glutamic Oxaloacetic Transaminase	1-40 Karmen Units
Total Bilirubin	0.2-1.0 mgm./100 ml. of serum
Alkaline Phosphatase	3-13 King-Armstrong Units
Creatinine	0.5-1.5 mgm./100 ml. of serum

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Results

Table 2 shows the number of patients in various age groups with at least one abnormal test. An examination of the table reveals that almost 60 per cent of all patients examined had at least one abnormal biochemical result. The large percentage of abnormals in the younger age group may be a reflection of the relatively small number and selectivity of patients tested.

TABLE 2

Patient's Age	*At Least One Abnormality*	*No Abnormalities*	*Total Patients*	*% Abnormal*
0-20	20	11	31	64.5
21-40	56	93	149	37.6
41-60	220	189	409	53.8
61 and up	294	115	409	71.9
TOTALS	590	408	998	59.1

Table 3 contains the total number of biochemical abnormalities for each individual patient. As expected, this table reveals that the total number of different biochemical abnormalities for each patient increases as the age of the patient increases.

TABLE 3

Number of Different Abnormalities Per Patient

Patient's Age	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Abnormal*	*Normal*
0-20	9	6	4	1	0	0	0	20	11
21-40	40	9	6	1	0	0	0	56	93
41-60	129	45	33	11	2	0	0	220	189
61 & up	129	74	46	25	12	6	2	294	115
TOTAL	307	134	89	38	14	6	2	590	408

Table 4 is a breakdown of the individual biochemical determinations by test. The creatinine test shows the fewest abnormalities. Furthermore, only five cases had an elevation of the creatinine without an elevation of either the BUN or uric acid. Conversely, 69 patients had elevations of the uric acid but not the creatinine, and 132 patients had elevations of the BUN with normal creatinine levels. Both the uric acid and the BUN were elevated in 29 patients with normal creatinine levels.

The BUN shows a large percentage of elevated levels above the age of 60. There were 49 patients with elevated BUN's and no other abnormalities. One hundred sixty out of 215 elevations were in the range between 20-30 mg per cent. We are not sure that mild, persistent, isolated elevation of BUN in a well hydrated patient without GI bleeding is an early sign of renal disease. It is probable that one must take age into consideration in determining at what level the BUN becomes pathologic. At any rate, the BUN is apparently valuable as part of a screening program, especially if the older age group is being tested.

TABLE 4

Abnormals by Test

Test	*Age Group*	*Number Abnormal*	*Per cent Abnormal*
Glucose	0-20	3	9.7
	21-40	12	8.1
	41-60	72	17.6
	61 and up	128	31.3
	TOTAL	215	21.5
BUN	0-20	3	9.7
	21-40	7	4.7
	41-60	54	13.2
	61 and up	151	36.9
	TOTAL	215	21.5
Uric Acid	0-20	3	9.7
	21-40	10	6.7
	41-60	51	12.5
	61 and up	73	17.8
	TOTAL	137	13.7
Creatinine	0-20	0	0
	21-40	2	1.3
	41-60	9	2.2
	61 and up	46	11.2
	TOTAL	57	5.7
Total Bilirubin	0-20	7	22.6
	21-40	23	15.4
	41-60	61	14.9
	61 and up	80	19.6
	TOTAL	171	17.1
Alkaline Phosphatase	0-20	17	54.8
	21-40	16	10.7
	41-60	91	22.2
	61 and up	110	26.9
	TOTAL	234	23.4
SGOT	0-20	4	12.9
	21-40	9	6.0
	41-60	34	8.3
	61 and up	39	9.5
	TOTAL	86	8.6

There were 36 patients with only uric acid elevations. Nineteen were females and 17 were males. The diagnosis of gout was made clinically in many of these patients. Other patients with hyperuricemia and additional chemical abnormalities may be manifesting the early findings of disorders of the hematopoietic system, thyroid disease, disorders of calcium and carbohydrate metabolism and

possibly other diseases which display uric acid elevations. Evaluation of these possibilities would require long-term studies.

The percentage of elevated glucose determinations increases as the age of the patient increases. The glucose alone was elevated in 60 patients or approximately 6 per cent of all patients tested. These figures suggest that a blood sugar level should be determined on each hospital admission in an effort to identify abnormalities of carbohydrate metabolism.[5] Additional procedures should of course be used to confirm the metabolic dysfunction.

The total bilirubin elevations do not appear to be related to age. The abnormal levels are usually explainable on the basis of the underlying disease process. There were, however, 39 patients with elevations between 1.0 and 1.5 mg per cent with no other biochemical abnormalities. There were 55 additional patients with levels in this range who had other abnormalities. Are elevated levels in this range significant? Continued inclusion of this determination does seem to be indicated.

The enzymes appear to have considerable potential in the biochemical screening concept. The SGOT elevations were usually combined with other biochemical abnormalities and show a rather constant percentage of elevations in each age group. We have had patients scheduled for surgery, under general anesthesia, whom the clinicians thought well. The biochemical screening revealed elevated SGOT and alkaline phosphatase levels and, after additional testing, the patients were shown to have anicteric hepatitis. Needless to say, surgery was postponed. Only eight patients showed isolated elevations of the SGOT, and these all had disease involving the gastrointestinal tract, biliary tree and/or liver.

Seventy patients had isolated elevations of the alkaline phosphatase. Many of these patients by conventional criteria had diagnoses of bone and liver disease. Two patients with isolated elevations had unsuspected metastatic liver disease subsequently diagnosed. Others, however, did not fit conventional patterns and it appears that inflammatory diseases of kidneys, lungs and gastrointestinal tract, including some ulcers, may produce elevated levels. A further observation was the occasional elevation of the enzyme in blood dyscrasias in which there did not appear to be bone involvement. The current technics available for fractionating the isoenzymes of alkaline phosphatase into the components arising from the liver, bone and gastrointestinal tract are not adequate in our hands, and more sophisticated methods must be developed for accurate and more complete identification of the tissue of origin.

Tentative conclusions

The choice of an ideal screening test is dependent on many factors but, among other requirements, it should certainly detect occult disease in the asymptomatic patient. The screening test, if elevated, should then lend itself to a relatively simple follow-up by additional specific tests. In combination, the tests should probably provide some overlapping of systems screened. This latter characteristic may or may not be helpful in arriving at a specific conclusion as to the disease process.

We feel that the preliminary results in this study substantiate the practicality and usefulness of the biochemical screening approach. Unsuspected abnormalities were found and considerable additional information was acquired on individual patients. At this time, we believe that all of the tests included in this group warrant continued inclusion and study. The inclusion of only two enzymes in this screen prevent our acquiring all the potential information that could be acquired from more complete enzyme studies. We intend to introduce other enzymes such as the lactic dehydrogenase into the screen as soon as it is possible to do so. Other frequently ordered tests to be considered for inclusion would be the proteins, cholesterol, calcium, phosphorus, and possibly even more specialized tests such as the protein bound iodine.

Individually, the alkaline phosphatase had produced the most interesting and unexpected findings. It was elevated alone and in combination more frequently than expected and because of the multiple systems which may be involved when it is elevated, it appears to be a very good screening test. The

bilirubin also tests multiple systems and is valuable. The BUN, uric acid, SGOT and glucose determination are tests which have been frequently ordered on large numbers of patients admitted to hospitals. Their specific value and place in such a program as this will require continued evaluation as will the inclusion of the creatinine test.

We feel that the information which could be retrieved from the data collected is much greater than we have so far extracted. It appears that more sophisticated systems, including computers, might be required to obtain maximum knowledge from each biochemical battery.[6] Also, the pertinent facts from the history and physical examination, when combined with the available biochemical data, might very well point to the diagnosis of disease in its incipient stage. If this is true, perhaps the screening approach should also be instituted on out-patients and in association with routine physical examinations.

A problem which becomes obvious in a study such as this is the question of "normal values." Should one use arbitrarily contrived "normals," calculated statistical "normals," or "normal values" based upon an individual's own biochemical levels? The statistically arrived at "normals," which are probably most commonly used now, may only be a reflection of intralaboratory reproducibility. "Normal values" based upon the individual's own levels, as previously determined upon the healthy individual, appears to have considerable merit. To use this latter method would require greater interlaboratory accuracy and reproducibility[7] than has yet been attained. The vagaries of standards and the wide variety of methodologies appear to be the deterrent to this latter approach at this time.

Summary

In this general hospital, urea nitrogen, glucose, uric acid, serum glutamic oxaloacetic transaminase, total bilirubin, alkaline phosphatase and creatinine have been offered as a group of biochemical tests to the physicians, at reduced cost, for nearly a year. The physicians have ordered these tests on almost a thousand different fasting patients.

The tests were performed on the "Autoanalyzer" and the results summarized with a breakdown by age. Almost 60 per cent of the patients tested had at least one abnormality. Both the total number of abnormalities and the number of different abnormalities per patient appear to increase with age. The greatest percentage of abnormalities occurred in the alkaline phosphatase determination with more than 23 per cent elevated, and the creatinine showed the fewest with elevations in 6.2 per cent. The potential information from such testing has been considered, and the problems of "normal values" and intra- and interlaboratory reproducibility have been discussed.

It is readily apparent that the biochemical screening approach has considerable merit and some shortcomings. Continued study and use of this concept seems indicated. •

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Emergency medical problems in rural areas*

Valentin Wohlauer, MD, Denver

Though this article originated in Colorado, and the author is a key man in that state's health department, its message is applicable in all states of the Rocky Mountain area.

HEALTH MOBILIZATION, which deals with disaster preparedness throughout the United States, has developed by necessity into a high priority issue in rural areas. Accidents and disasters—either man made or natural—can happen, and have happened, in our state, throughout the United States and in almost every country in the world. Colorado felt the impact of a flood in 1965, both in the metropolitan Denver and in many rural areas. What can rural communities do? What can farm families do? What are the special problems in these areas?

How can be best define "disaster"? In a community with population of 500 to 1500, a school bus accident where several children are seriously injured could be considered a major disaster. This same event in a large metropolitan area could easily be absorbed in the routine work of a city hospital. These events, and many others, do not respect geographic boundaries and have to be considered in plans for preparedness.

For many years, the Rural Health Council of the AMA and the Rural Health Committee of the Colorado Medical Society have worked with the Extension Services, the Home Demonstration Clubs and many other farm organizations to define the problem and to prepare action programs. Recently help has come from the state government, state and local health departments and the military. Only by utilizing all these resources can adequate action be taken. Much of this planning has been included in the State Survival Plan, and the Emergency Health Service Plan which was just finished, and will be available to every county and every community within the state. Looking at the problem we immediately realize that different approaches must be used, and planning has to take into account the peculiarities of different areas of the state, including geography and population. Some of the important programs will be discussed in details, others will be only briefly mentioned.

Medical Self Help

Medical Self Help is one of the oldest programs initiated by Health Mobilization to prepare people to cope with emergencies. Training of rural populations has from the beginning received high priority in our state, since medical care was not always available and many families were used to taking care of their own needs. As in other states, we have found that generally we could expect a more eager response in the rural counties than in many of the larger cities. Local Home Demonstration Clubs, PTA's, other farm organizations and service clubs considered this program of prime importance. Most of the hospitals in rural areas, quite aware of their shortage of highly trained personnel, made it mandatory for all ancillary groups, especially nurses aides and licensed practical nurses, to take Medical Self Help training, very often during actual working hours. School boards have considered this program of enough value that within the last few years it has been included in the curriculum of the various high schools. Teachers became interested and have found time to present these courses, not

*This paper was presented at the American Medical Association meeting held in St. Louis, February 18-19, 1967. Dr. Wohlauer is Chief of Health Mobilization Services, State Health Department of Colorado.

only during the day, but also in adult evening classes as well. Educational TV has been used, both in Denver and in semi-rural areas, through the facilities of Mesa College in Grand Junction.

Utilizing these new approaches, there has been a three-fold increase in the total number of people trained in Colorado between 1965 and 1966. But we cannot be satisfied with these accomplishment as much more needs to be done. Since many of the mountain communities have large transient tourist populations in both summer and winter, forest service personnel, ski area operators, ski patrols and mountain rescue groups have been approached and will be included into the over-all state plan. By the end of 1967, we anticipate another large increase in trained people. The main problem at present is to find and train enough teachers to fulfill the demand for new classes. In each of our counties we have a medical self help steering committee composed of representation from the local medical society, the local health department, the civil defense director and the local high school. Wherever possible we have added local Red Cross representatives. These people set up plans for the classes and arrange for classrooms, teachers and the necessary publicity. Monthly reports are made to our office on the number of trainees.

Packaged Disaster Hospitals

The second part of our program was developed about five years ago. It dealt with the prepositioning of Packaged Disaster Hospitals. In the early years almost all of these hospitals were located in rural areas away from the so-called target areas, so that there would be some assurance of their survival following a large scale nuclear attack. However, some of these locations were not realistic for staffing and operating. Some of these hospitals have already been relocated and others will be within the near future. Colorado has at present 50 of these hospitals, giving a 10,000 bed capacity. This is almost the same number of hospital beds presently available in the state, excluding federal hospitals. We were fortunate in receiving help from Fitzsimons Army Hospital last year to revise our over-all Emergency Hospital Plan including both existing and PD hospitals. Two medical service officers from Brooke Army Medical Center at Fort Sam Houston were assigned to write up this program and at present we are integrating most of their recommendations into our state plan. However, as I have mentioned before, our rural areas are extremely capable of initiating plans, and communities vie with each other in regard to preparedness programs.

Needless to say, just storing boxes of medical supplies and equipment in any given community is not enough. Everyone needs to know where it is, what it is, and how it can be used. For the last four years, training programs have been executed in each of the communities, an average of one a week during the summer months. Since we must take a large semitrailer with the training unit to these communities, it is not feasible to plan trips during the winter months when hazardous driving conditions exist throughout most parts of our state. We have been fortunate to have had wholehearted cooperation from the Colorado National Guard, long before the time when military liaison was officially recognized, and the National Guard has worked out transportation problems and other logistics with us.

Training exercises are set up for these communities several months in advance. Planning meetings are held with key people, as this involves all agencies, both official and semi-official. An adequate training is more than just setting up the hospital and bringing in patients. A so-called crash site has to be developed; patients have to be prepared realistically; adequate transportation has to be available from the crash site to the hospital; traffic control has to be estabilshed; two-way communications not only between the crash site and the hospital site, but also within the hospital, needs to be available. External security as well as internal security within the hospital area has to be developed. Utilities have to be provided to augment the existing community facilities. Mass feeding, both for patients and hospital personnel, has to be provided. Adequate planning for professional and other staffing is important. If the community cannot provide enough per-

sonnel they have to be brought in from neighboring communities, and this sometimes has to be accomplished across state lines, with the military and with other agencies. In short the critique, and this, in itself, gives each the community. After the exercise follows it is a formidable but realistic undretaking for community the chance to improve their program.

Then there are those communities without a PDH. Their hospital facilities have to be tested and upgraded following a disaster drill. Their personnel has to be trained; ancillary personnel has to be made available; and emergency drills have to be called without prior knowledge of the people involved. Many of these exercises and their planning have developed closer ties between hospitals in different communities. At present all our PDH's have been adopted by existing hospitals in large communities, who provide staffing if necessary.

We have established criteria for three types of disasters. For a small scale local disaster, the plan calls only for local personnel to put it into action. For an emergency of a larger scale, teams from the adopting hospital will be brought in by various means including National Guard planes or helicopters. For a national disaster, where the operational site of the metropolitan hospital becomes untenable, then the adopting hospital will move all its operations to the rural community until such time as it can return to its original base. The same type of arrangements have been made with all federal hospitals, both military and V.A. All these relocation sites have been set up, many in areas where one or more hospitals can be established.

Personnel training

The third part of our disaster preparedness program is to train enough personnel, especially in rural areas, to provide the nucleus for staffing the various installations. Each year refresher courses in mass casualty care are offered to physicians, both M.D. and D.O., especially geared to the general practitioner. Usually these are one-day seminars, offered on Saturday or Sunday, and taught by well trained personnel from either Fitzsimons Army Hospital or the Air Force Academy Hospital. This year an extra effort will be made to have one or more speakers at the various area wide medical meetings within the state. A new course on Medical Aspects of Chemical Warfare for medical officers of the active armed forces and the Reserves will be offered at Fitzsimons Army Hospital.

Other courses have been developed for veterinarians and dentists in disaster medical care. In many of the rural areas where there is a shortage of physicians, these disciplines will have to provide at least part of the staffing for hospitals and also for first aid stations. Enthusiasm has been shown by these professions, and many times invitations to their monthly meetings have given us opportunity to discuss these programs with them.

Needless to say, the nursing profession has taken an active part in setting up training seminars for both RN's and LPN's. These programs have been constantly revised to give attention to the changing concepts of disaster medical care. A disaster preparedness manual has just been printed, which will be made available to all the participants in disaster courses, and which will provide a training guide for schools of nursing and in-service training in the various hospitals. An important part of these programs for nurses has been the emphasis on psychologic illness and on first aid measures to help these victims of disasters. These nursing programs also deal with community planning for disaster preparedness, since only a well prepared and willing community can cope with problems that may arise.

There will be several new programs offered for the first time this year. These will include a two-day seminar for sanitarians and environmental health personnel which will deal with all aspects of water, food, sewage and vector control. Another group which will be integrated into the program primarily through expansion of medical self help, will be the physical and occupational therapists, and it is the intention to use these people in rural and semirural areas to be of assistance beyond their specialized capabilities. Recently the optometrists have expressed a willingness to be included in disaster preparedness, and they will be addressed at their annual meeting this year.

An Emergency Health Service Seminar for local rural communities is in the planning stage. These will bring key medical and allied people together with civil defense personnel to discuss some problems that might be present in their given area. After making surveys of existing facilities and supplies, solutions will be considered which hopefully will make these communities more self sufficient in the future. The movie of the Alaskan earthquake, "Though the Earth Be Moved," will be used.

Ambulance service

In rural areas the staffing, training and equipping of ambulances are other important services. For a long time ambulance services in these areas have generally been provided by the mortuaries as an additional service to the community, However, this was always provided at a financial loss, and for this reason many of these services have been discontinued or severely curtailed. However, ambulance services are an extremely important part of rural emergency medical care and must be made available. The A.M.A., the Rural Health Committee of the Colorado Medical Society and the rural communities all feel that this service needs to be continued. Individual groups are getting together, county governments have become concerned, and many different plans are being developed to provide adequate ambulance services. Minimum standards need to be adopted. Ambulance districts have been formed in some counties. In other areas it was felt more feasible to have the ambulance hospital based and the ambulance attendants double as hospital orderlies. Every single community is willing to tackle the problem. Training programs are being developed, which follow the advanced Red Cross program and which includes cardiac resuscitation. These courses are being taught by local practitioners on the local level, since it is impossible to bring all these people together to a central area more than once every few years.

Blood replacement

Another problem encountered in the rural parts of our state was the unavailability of blood following large scale disasters, when communications and travel are severely curtailed. Many of our isolated mountain communities, which faced these problems every winter, had developed some rudimentary programs. The walking bloodbanks had served satisfactorily many times. By expanding these facilities and initiating active blood-typing programs some of these counties have been able to develop files on almost all of their citizens. This is an excellent example of how rural areas, even the sparsely populated, can and will pool their resources, if they are properly approached and if they recognize the need and feasibility of offered programs. But we have gone further and are in the process of stock-piling plastic blood recipient sets in the key cities of the ten support areas in the state. Most of these are again in rural areas and training programs are necessary so people will know what is available in time of need.

Mortuary services and identification of the dead following a disaster in rural areas will become an overwhelming job. Discussions with county coroners (who in Colorado do not have to be physicians) have been held. An adequate system of medical examiners is probably the ultimate answer and has been approved by the house of delegates of the State Medical Society. Some steps have been taken to assure adequate identification of bodies. Hopefully we will resolve this program in the near future.

Poison control

Colorado is primarily an agricultural state and in recent years the use of pesticides has increased manyfold. This poisoning potential, added to the other problems of poisonings in rural areas, initiated a poison control program, which is a joint undertaking of the Colorado Health Department, Colorado Medical Society, and the Colorado Medical School. Through the Rural Health Committee suggestions were made to establish poison control centers in each of the eight districts of the committee. Some of these have been in operation for several years. Monthly meetings are held with the state steering committee, and the program is operating with modifications. The local centers are usually operating in smaller rural communities. All of them are affiliated with the National Poison Center

and receive up-to-date card files every other month. Also they are able to contact the medical school for additional information or for expert advice, day and night. Poison control meetings for local hospital staffs have been initiated and are given in the areas where poison centers are located. Follow-up on poisonings will be handled through the State Health Department, especially in the field of suicides. Lay education programs will also originate in the State Health Department. Great help has come from the Extension Service and the home demonstration clubs to make this program meaningful.

Accident prevention

In recent years the whole field of accident prevention in rural areas has received attention. Colorado became aware of the studies made in California that automobile accidents, everything else being equal, produce more disastrous results in rural areas than in metropolitan areas. Some of the factors involved are caused by distances from which help needs to come. More and more persons in rural areas need to be acquainted with Red Cross first aid, medical self help and other life-saving procedures, so that the highway death toll can be lowered.

Even in a land locked state like Colorado drownings have increased each year and it has become apparent that steps need to be taken to help resolve this problem.

Home accidents on the farm can be more lethal again due to the distances involved before the victim can reach the emergency room of a hospital. Accidents with farm machinery are still on the increase despite the persistent efforts of the Rural Health Council A.M.A. to inform and educate people on the hazards of farm machinery. Especially tragic are the many tractor accidents where teenagers are crushed to death.

With the ever increasing usage of our recreational facilities, both in summer and winter, we have been gravely aware of many of the difficulties associated with these activities. Colorado is Ski Country U.S.A., and we are concerned about the many ski accidents and injuries that happen in all our areas. As more and more novices take up this sport and come long distances, accident rates have risen. Education has to be provided to the ski patrols in all aspects of accident prevention. Fast transportation brings people from sea level to the high country ski areas in a relatively short time with little chance to become acclimatized. Breathing difficulties and heart attacks are occurring more frequently. Ski patrol personnel is at present taught cardiac resuscitation, since it is needed so frequently. Ski areas are generally removed from large metropolitan centers, so adequate stocking of emergency rooms, and provision of ambulance services, has become of major concern. All major ski areas have one physician added to the ski patrol on weekends, a practice started by the Colorado Ski Doctors Association in a few areas close to Denver and now being adopted in most of the other areas. Again distances are important, and more than first aid may have to be given the injured. Since most of the ski areas have the capability of housing a large number of people and would provide mass feeding, they are being included in our over-all disaster plan after relocation starts for displaced persons following a large scale disaster. Ski patrol persons already are well trained in first aid, but again may have to be given adequate training to be available to help with the care of medical emergencies.

Summer recreation, too, take its toll. Drowning and many other accidents happen far from major population areas. Training programs for the United States Forest Service and mountain rescue units is important and is eagerly sought out.

Ideas from other countries

Just a few words of what other countries are doing. I had the privilege of visiting a number of European countries two years ago, where I met with the people involved in disaster planning and saw some of the programs that they had developed. Many of these areas are as rural as our areas and have essentially the same problems. Some of the ideas that were developed in Switzerland in regard to floods and accidents to large dams and reservoirs can and should be utilized in our own state, since we are dealing with the same situations. Training for mountain rescue personnel will also be stressed more

emphatically since each year many disasters, or near disasters, happen to inexperienced mountain climbers. Norwegian disaster preparedness has involved stockpiling in strategic areas and drills for first aid personnel on a monthly basis as our reserve or National Guard units are doing. In Denmark those boys that are rejected by the draft for minor medical defects are training each year in a disaster unit for a period of two weeks or more. Some of these programs need to be considered in our country, and it is high time that this be done.

Summary

Emergency medical problems exist in rural areas to the same or greater extent than in metropolitan areas. Rural populations throughout the years have shown initiative to help themselves, if given proper guidance, to a greater degree than populations in city areas. It is important that the same emphasis be placed on survival of rural people as has been stressed for city dwellers—maybe they will be the survivors to provide for the refugees from the metropolitan areas and to rebuild our country. •

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Carcinoma of the external ear*

A guide to surgical management

Richard W. Loughry, MD, and Erick R. Ratzer, MD, Denver

ADEQUATE INITIAL TREATMENT of most external ear skin carcinomas will achieve over a 90 per cent five-year cure rate. It is the purpose of this paper to review established surgical technics, applicable to office or hospital outpatient facilities, which will yield such cures while maintaining fully acceptable cosmetic results. Although skillful radiotherapy will give similar cure rates and satisfactory cosmetic results, the authors prefer surgical excision because of availability, patient convenience, and histologic proof of the extent of the carcinoma.

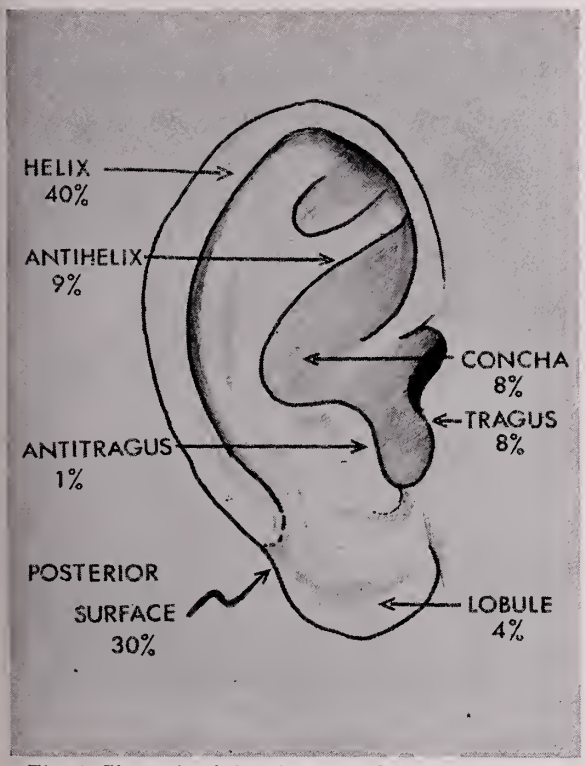

Fig. 1. Sites of origin of external ear carcinomas.

*From the Bonfils Tumor Clinic, Department of Surgery, University of Colorado Medical Center, Denver.

Anatomic considerations

The sites of origin of 360 external ear skin carcinomas reported in three series[3,4,6] are illustrated in Fig. 1. It is seen that 83 per cent of these cancers are located on the helix, antihelix, lobule or on the posterior surface of the external ear. Tumors in these areas can be satisfactorily treated by the procedures described below. Carcinomas located in other areas of the ear require more extensive surgical procedures for their treatment and are beyond the scope of this paper.

The yellow fibrocartilage supporting the ear is of fundamental importance in the natural history and treatment of these cancers. This cartilage resists tumor invasion and allows the tumor to spread beneath the skin for variable distances beyond the visible external margin. Accordingly, a 0.75-1.0 cm margin around all visible tumor is recommended, and these margins should be confirmed by histologic examination. When the cartilage is invaded by tumor, full thickness excision of the involved portion of the ear is required. Cartilage invasion occurs earlier on the lateral surface of the ear. On the helix and posterior surface, the subcutaneous space is deeper and affords more protection.

The lymphatic drainage areas should be inspected when examining all patients with external ear lesions. The outer or lateral surface drains anteriorly to the pre-auricular nodes, while the lobule and posterior surface drains to the superficial and superior deep cervical nodes. Palpable adenopathy should be considered metastatic cancer until proved otherwise, although it can be secondary to inflammation. Lymph node metastases has

been reported in 6.9 to 18.0 per cent of external squamous cell carcinomas,[6,7] but it is extremely rare in basal cell carcinomas. Palpable nodes require diagnostic biopsy, usually followed by radical surgery if they contain metastatic cancer.

The sensory supply of the external ear permits good local anesthesia. The distribution of the sensory nerves is illustrated in Fig. 2. Anesthesia of the entire ear can be obtained by first raising skin wheals superiorly and inferiorly, and then infiltrating anteriorly and posteriorly with a long 23 ga needle (Fig. 2). The posterior wall of the external auditory meatus, innervated by the auricular branch of the vagus nerve, may need a supplemental injection. This type of field block is preferable to direct infiltration around a lesion as no distortion of tissue planes occurs. Direct infiltration may be used occasionally when the tumor is very small and mobile.

Incidence

Carcinomas of the external ear comprise between 4 and 8 per cent of all skin cancers.[6,7] The frequency of the various histologic types of external ear malignant tumors, determined from a review of 712 reported cases,[3,4,7] are as follows: squamous cell carcinoma, 58.7 per cent; basal cell carcinoma, 37.9 per cent malignant melanoma, 2.5 per cent; sarcomas of all types and metastatic adenocarcinoma, 0.9 per cent. Carcinoma of the external ear are nine times more common in men than in women.

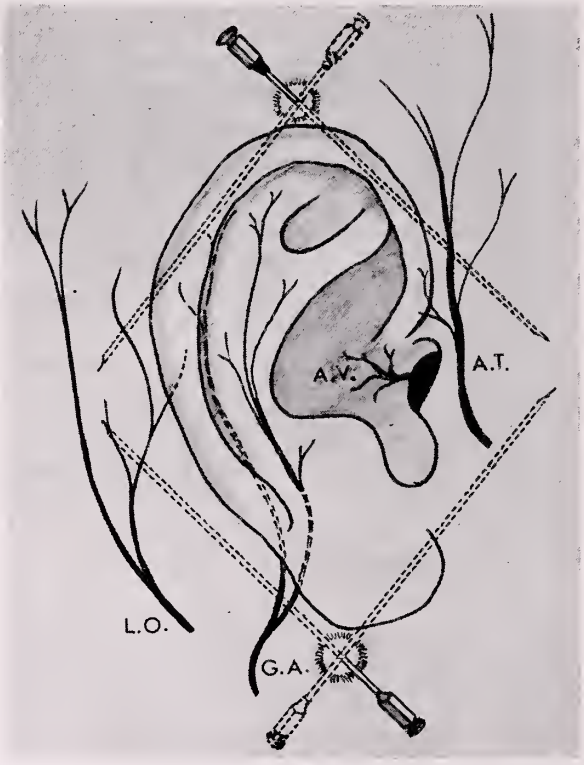

Fig. 2. Sensory nerves and technic of field block. L.O.—Lesser occipital nerve; G.A.—Greater auricular nerve; A.T.—Auriculo-temporal nerve; A.V.—Auricular branch of vagus nerve.

Diagnostic considerations

The responsibility for early diagnosis of these tumors is shared by many medical specialties. *Any* physician who examines male patients between 50 and 80 years of age should "look twice" at the external ear. This is particularly true for older men with outdoor occupations, a previous history of senile keratosis, or a proven history of skin cancer. It is regrettable that advanced cancer of such a readily visible structure as the external ear still occurs, whether due to patient neglect or indifference, or to physician "inattention" or mismanagement.

Surgical technics

The following surgical technics are based on accepted principles of reconstructive surgery of the auricle.[1,2,5]

Small lesions located on the *helix* are common; very often they are less than 1.0 cm in diameter. When the cartilage is not involved, they can be excised in an elliptical manner with the long axis parallel to the helix (Fig. 3a). Ample skin can be obtained for closure by undermining in a plane between the cartilage and remaining skin. If cartilage is invaded, it should be excised together with the tumor and the corners trimmed back to prevent prominences at the ends of the incision. The skin is then closed with fine nonabsorbable suture (Fig. 3b).

For larger *anterior lesions* involving the margin of the helix, scaphoid fossa, or antihelix as illustrated in Fig. 4a, full thickness resection is usually indicated because the cartilage is frequently invaded. One-third of the external ear may be removed and still achieve an acceptable cosmetic result. A large "V" excision is hard to close. Better margins and a more acceptable cosmetic appearance can be obtained if additional triangles are

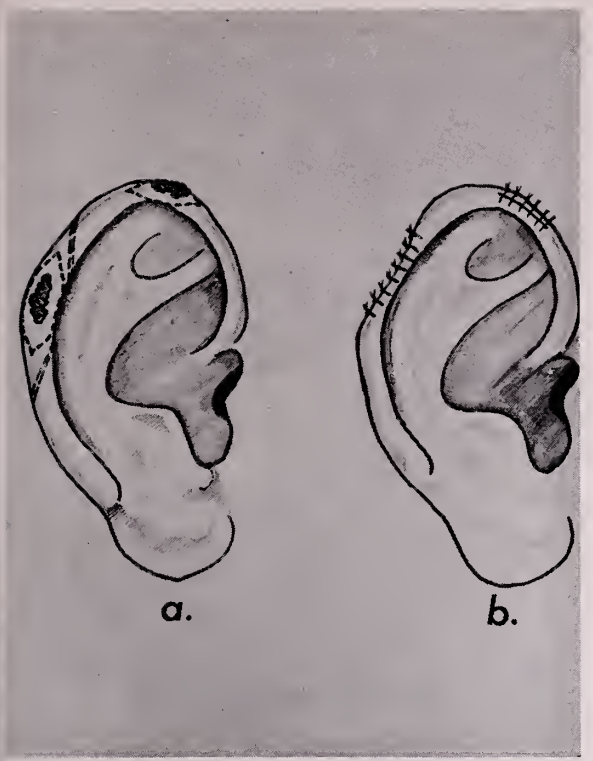

Fig. 3. Lesions of the helix. Single dotted lines indicate skin incisions; double dotted lines indicate margin of cartilage excisions.

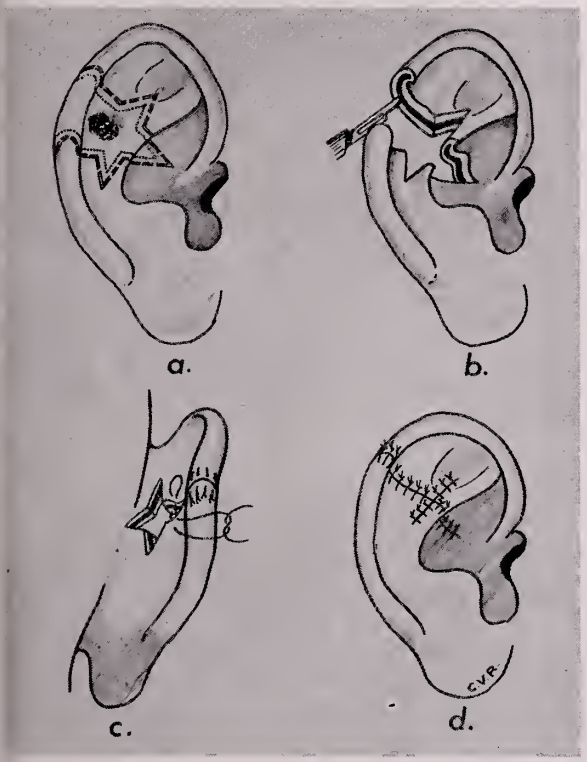

Fig. 4. Full thickness resection. a.—Full thickness resection along dotted line. Cartilage is then trimmed to double broken line. b.—Margins undetermined. c and d.—Defect closed in two layers.

made. One side of these triangles should be parallel to the rim of the antihelix, as is illustrated in Fig. 4a. Several additional measures are necessary for good results. The area to be excised should be outlined with marking ink to assure symmetrical sides, and the incisions should be made perpendicular to the ear surface. A sliver of cartilage should be trimmed back from the skin edge and the skin on both sides of the cartilage undermined (Fig. 4b). Hemostasis can be achieved with light cautery or fine absorbable sutures. The defect is then closed in two layers with fine suture, such as 5-0 nylon. Beginning at the helix and moving toward the retroauricular fold on the posterior side, mattress sutures are placed. These include the cartilage for stability (Fig. 4c). Simple sutures are then used to close the wound anteriorly (Fig. 4d). The ear should be padded on both sides when applying the dressing to prevent fluid accumulation. The anterior sutures are removed in about 5 days and the posterior sutures in 10 to 14 days.

Lesions involving the *lobule* usually occur near the posterior border and can be managed as illustrated in Fig. 5. If the tumor is located more anteriorly where the lobule joins the posterior face (Fig. 6a), the margins of excision must still be adequate (0.75-1.0 cm). The skin on the side of the face should be included to insure this margin, and closure accomplished as illustrated in Fig. 6c.

Carcinomas on the *posterior surface* of the external ear tend to invade the cartilage

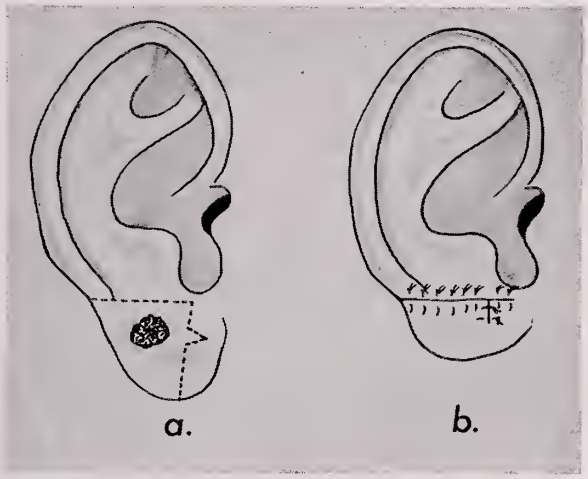

Fig. 5. Posterior lobule lesions. A small triangle can be removed from either margin to obtain equal length during closure.

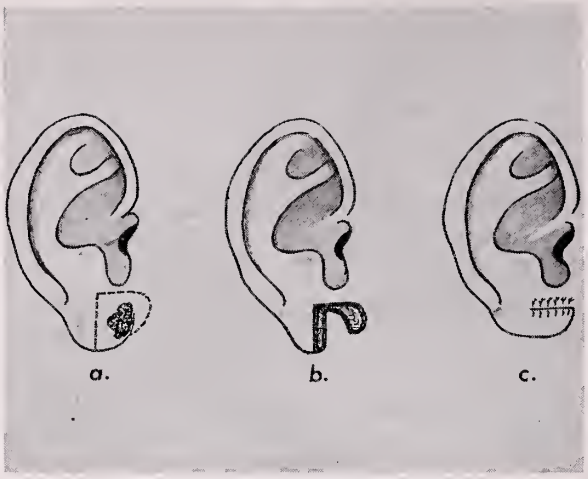

Fig. 6. Anterior lobule lesions.

late because the deeper subcutaneous space acts as a temporary barrier. Simple elliptical excision with the long axis parallel to the border is adequate for many of these cancers. If the cartilage is invaded full thickness excision as described above for anterior lesions (Fig. 4) should be performed. The defect is closed in a similar manner. For lesions closer to the scalp, or in the angle between the ear and scalp, the incision can be made so the two margins will coapt when the ear is pushed against the head (Fig. 7a, c). An ellipse of cartilage can be removed in this situation, and this maneuver can facilitate the closure (Fig. 7b). The cut edges of the cartilage can be approximated with fine absorbable sutures, and this maneuver draws the ear closer to the head. The skin edges are everted and approximated with nonabsorbable vertical mattress sutures. An alternative procedure for closing a defect left by excising a cancer in this area involves the use of a full thickness skin flap based inferiorly (Fig. 7d). Care should be taken while dressing the wound to apply enough padding to obliterate "dead space" in the retroauricular fold beneath the graft. This may be accomplished with moist cotton balls or by placing rolled gauze in the retroauricular fold and tying it in place with several sutures passed through the ear (Fig. 7e). These sutures are also tied over a gauze roll on the outer or lateral aspect of the ear. They must not be tied too tightly or circulation to the flap will be impaired.

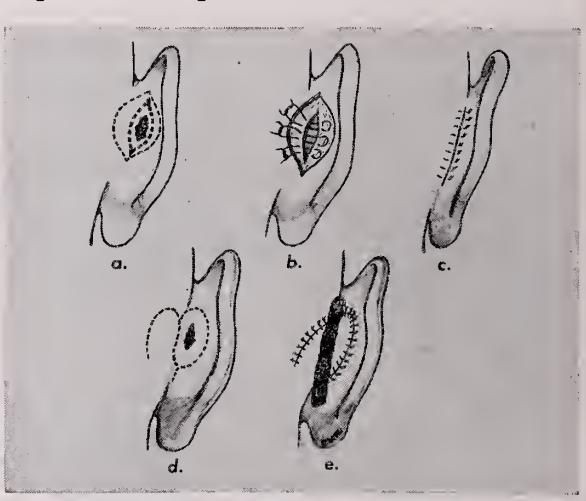

Fig. 7. Posterior surface lesions.

Summary

Simple surgical technics for initial management of a majority of all external ear skin carcinomas are reviewed. These procedures will achieve over a 90 per cent five-year cure rate for squamous and basal cell carcinomas, give a good cosmetic result, and produce minimal patient inconvenience. •

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Pyoderma gangrenosum

A complication of ulcerative colitis

Theodore R. Lenz, MD, Pueblo, Colorado

Case report illustrates a serious complication of a dangerous disease.

Ulcerative colitis is not an uncommon disease. It can be distressing. Toxic megacolon and pyoderma gangrenosum are among the complications. Both of these are unforgettable developments with desperate consequences unless definitive treatment is instituted rapidly. The patient to be presented here had ulcerative colitis with toxic megacolon and pyoderma gangrenosum.

CASE REPORT

When this 14-year-old boy was first seen, he complained of diarrhea and stomach cramps. He was anemic, having a hemoglobin of about eight grams percent. No enteric pathogens were found on stool culture. He denied knowledge of any bleeding. Oral iron medication was prescribed.

It was about six months before he returned, this time complaining of sores on his knees. A culture was taken from a previously unopened pustule, and he was started on an antibiotic orally and as a salve locally. The pustule was sterile. He was still anemic. He returned three days later with pustules all over both legs and arms. His mouth became increasingly inflamed and involved with ulcers as his skin disease progressed. At first he generally denied any difficulties except for abdominal pain with bowel movements and occasional bouts of diarrhea. As he became worse and more anxious he admitted to previously having had bloody stools, bouts of unexplained fever, anorexia, and arthralgias. He didn't take the iron medication because it made his abdomen hurt. He had been aware of lack of energy and strength. There was no history of jaundice. He had not been taking iodides or bromides. There was no history of exposure to tuberculosis nor history of food allergy.

Because some psychologically oriented doctors believe ulcerative colitis is the result of the sufferer's personality, some attention was given to this aspect. The emotional relationship between him and his mother was strained by his hostility and resentment toward her. He would not do anything she wanted him to. He did not admit to any feelings of hopelessness, a trait reported in persons suffering from ulcerative colitis. However, his facial expression was one of hopelessness. At school he was always well behaved, but always dirty and never washed. He had been unable to keep up in school and was placed in special education classes. The school nurse reported that he was the "teacher's pet" and that his feelings were easily hurt.

He was a frail, ashen-colored, fearful boy, whose dirty skin had many yellow-centered abscesses, two centimeters in diameter, randomly scattered over his extremities. He cried out frequently. His lips were swollen and inflamed. His oral mucosa was involved with painful ulcers. There was no jaundice. The cervical lymph nodes were slightly enlarged. His heart rate was rapid—about 130. His abdomen was flat. The liver was not enlarged. No definite abdominal tenderness was present.

Another pus-filled bulla was cultured but again was sterile. During the following two days the skin lesions enlarged rapidly to huge coalescing, ragged ulcers, whose bright red bases were smeared with yellow-green pus. Some were four inches in diameter. Then he developed abdominal distention. An x-ray of the abdomen showed massive dilatation of the colon. Sigmoidoscopy revealed a bloody diarrheal stool. The rectal mucosa was slightly edematous, but no ulcers were seen.

He had no albuminuria and no elevation in his B.U.N. He had no elevation in serum bilirubin, but had a low serum albumin of 1.7 grams per cent. His electrolytes were normal except for hypokalemia of 2.6 meq. per liter. The serum iron was low—56 mcg. per cent.

He was treated with three liters of fluids I.V. daily to replace fluid and electrolyte losses from the ulcers. Hydrocortisone 100 mg. was added to each liter, along with one gram of Prostaphlin. Potassium was also added intravenously. He had transfusion of four units of blood. After diagnosis of toxic megacolon I.M. Strep-Combiotic was given twice daily. His ulcerated extremities were covered with Furacin dressings the first two days and

subsequently with Zepharin-soaked gauzes. The dressings were changed twice daily. After three days of medical treatment he was taken to surgery for a total colectomy and iliostomy because of the failure of significant improvement in the function of his colon and danger of colonic perforation.

Pathologic examination of the resected colon revealed the mucosa to be widely destroyed by ulcers up to 1x3 cm. in diameter, starting distal to the cecum. Ulcers involved the remainder of the colon to within 3 cm. of the distal resected border. The wall was only minimally thickened. Microscopic examination showed ulcers whose bases were infiltrated with neutrophils. Neutrophils were also in the submucosa in some areas. There was also a great increase in lymphocytes and plasma cells. No malignant change was found.

Postoperatively antibiotic and corticoid therapy was continued. He was given additional units of plasma to replace protein losses. Skin grafts were applied to the larger ulcers about three weeks later to prevent further damage to extensively exposed muscles on his legs.

Discussion

This disease is among those whose exact cause is unknown, so many explanations are offered. Current speculation of etiology includes possibility of an autoimmune basis. This is supported by the reported rejection of autogenous skin grafts unless adequate doses of corticoids were given. A delayed hypersensitivity reaction to the intradermal injection of the patient's own white blood cells has been observed.[1] This boy did not receive any corticoids at the time of, or after, skin grafting. Skin grafting was delayed until a positive nitrogen balance had been established, as manifested by healing of smaller lesions, ability to retain food, and improvement in serum proteins. The skin grafting was successful. This suggests that improvement in the patient's metabolic state is necessary for skin grafting and that suppression of autoimmunity is not.[2]

Vitamin deficiency has been suggested as a cause, but adequate vitamin supplements alone do not cure ulcerative colitis or pyoderma gangrenosum.[3] There are those who favor a psychogenic etiology, but the character traits described are probably the patient's response to his disease.

The term "pyoderma" suggests pyogenic bacteria. This is misleading, since frequently no bacteria can be isolated from carefully opened bullae. Bacteria that have been reported present were those forms normally present on the skin. Antibiotics are probably useful to keep secondary bacterial invaders out of the ulcers.[4] Pyoderma gangrenosum can occur with other diseases, such as peptic ulcer, regional enteritis, and Behcet's disease. Although some of these are commonly recognized, their exact etiology also remains obscure. •

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The changing concepts of medical staff organization*

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CHANGE is the order of the day. This tritest of trite statements nevertheless describes virtually all aspects of our complex society. It would be remarkable indeed if medicine and hospitals had escaped change. They have not, and much of it appears to be willy-nilly. But the changing concepts of the hospital medical staff organization are not so much a matter of new concepts as of changes in understanding and in emphasis of basic principles.

The hospital itself is changing, and the community hospital is increasingly assuming the role of a community medical center. Education at all levels, as well as laboratory research, are augmenting the traditional role of patient care. The community hospital thus approaches the character of the university hospital. Regionalization of hospitals and cooperative arrangements among hospitals will proceed at an accelerated pace under the Regional Medical Programs of Public Law 89-239. But of even greater importance to the staff physician, more and more functions previously performed in the physician's office are now becoming functions of the hospital. To mention a few, there is the exploding emergency service, the ever expanding outpatient department, and the many highly technical diagnostic and treatment procedures which require specialized facilities, equipment, and personnel with costs of such a magnitude that it becomes totally impractical to perform them in the physician's office. For example, a decade or so ago, a patient could have a complete cardiac workup in a physician's office. This examination now might involve a quarter of a million dollars worth of hardware, weighing ten tons. Along with these changes, the image of the hospital has changed. Almost imperceptibly, patients are beginning to shift their identification from the solo physician to the hospital center.

Many of these changes have been brought about by the medical profession itself, with the hospital merely serving to fill the voids in medical care which individual physicians are unable or unwilling to fill. But whatever the cause, physicians feel threatened. They want to cling to the control of the hospital which they think they once had. Fragmentation may occur, and a totally untenable situation may arise in which physicians hold the obsolete notion that the hospital is a twofold organization—a self-governing and more or less autonomous medical staff that renders medical care, and a separate, loosely related business and administrative organization which provides facilities and personnel to assist the doctors in the care of their patients, the governing board being around merely to raise money. The hospital is looked upon as the doctor's workshop. There is a gauze curtain between the medical staff and the administration, but fortunately, most of the gauze used today is of the disposable variety.

The hospital is a single organization. This is the first basic principle to be emphasized. The primary purpose of all concerned is the same—to provide high quality patient care. When this principle is firmly established, the hospital is no longer merely the doctor's workshop, and then it is recognized that the physician's responsibility extends beyond the

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care of his own patients. The one-to-one physician-patient relationship can remain inviolate only so long as the one doctor provides good care for the one patient. The entire medical staff, the board of trustees, and the administration share moral and legal responsibilities to take whatever steps are necessary to insist on high standards of care for all patients.

Legal and ethical responsibility

The vital interest of hospital trustees in professional standards has been made crystal clear by a recent legal landmark—the 1965 decision for the plaintiff in the case of Darling versus the Charleston Community Memorial Hospital, now confirmed by the Illinois Supreme Court [211 N.E. 2d 253 (1965)]. This case is of such importance that it deserves a brief review. A high school boy broke his leg during a football game. He was treated in the community hospital by a general practitioner who applied a cast which was too tight. From the beginning, the nurses were aware of adverse symptoms and findings and they frequently informed the physician of the complaints. After several days, the cast was split, and after ten days the patient was transferred to the care of a specialist in a metropolitan hospital where, after several operations, the leg was amputated. Suit was brought against both the attending physician and the community hospital. An out-of-court settlement was quickly concluded with the physician, and the case proceeded to trial against the hospital. Allegations against the institution included four major claims: the hospital was negligent in allowing this particular doctor to engage in orthopedic practice when he was not qualified to carry such responsibility; the institution had not reviewed the physician's qualifications following issuance of his license to practice medicine nearly three decades ago; the hospital had failed to review the reports of the tissue committee for the purpose of determining the qualifications of all members of the staff; and the tissue committee had failed to meet regularly to review surgical procedures being undertaken within the hospital. Significantly, the plaintiff also alleged that the lay administrator knew from the nurses' daily reports that this case was a "problem" and that no one had taken steps to enforce the medical staff bylaws requiring consultations in such cases. The plaintiff maintained that the nurses were at fault in not impressing upon the administrator the seriousness of the case, the administrator was to blame for failing to involve the medical staff, and the staff itself was negligent in not supervising the physicians and enforcing their own bylaws.

In support of his allegations, the plaintiff cited the standards of the Joint Commission on Accreditation of Hospitals and also the hospital licensure standards of the Illinois Department of Health. Both state that the governing body of the hospital is ultimately responsible for patient care and for professional standards of the institution. The plaintiff also called attention to the ethical standards of the American College of Hospital Administrators which state, in effect, that an administrator's reluctance to interfere in a physician's handling of a case should never be permitted to jeopardize the patient's welfare. The plaintiff urged that licensing, accreditation, and ethical standards as well as bylaw provisions make quite clear the hospital's duties to the patient, and violation of these responsibilites creates legal liability.

The court's affirmation of the jury's verdict, supported by the Illinois Supreme Court, means that the law has sanctioned a literal application of the standards promulgated by both public and private regulatory bodies—the state Department of Public Health on the one hand and the Joint Commission on Accreditation of Hospitals on the other. The jury was not sympathetic to the hospital's contentions that it operated on the same basis as other similar community hospitals, that a corporation cannot practice medicine, and that a hospital is unable ever to command a physician's act in the practice of his profession.

The jury verdict in effect said that a hospital is considerably more than a place that furnishes physical facilities for the practice of medicine by an unorganized group of practitioners. This decision greatly broadens a hospital's legal responsibility for the qual-

ity of professional care, but it should not be surprising, for the courts have been moving in this direction for a number of years. In 1955, the California courts held a hospital liable for the malpractice of an anesthesiologist who was on regular on-call duty for the hospital, although the doctor billed the patient independently for his fee [Seneris v. Haas, 45 Cal. 2d 811, 291 P. 2d 915 (1955)]. Three years later, again in California, a hospital was held responsible to a maternity patient when the nurses failed to notify the hospital administration of dangerous bleeding due to the physician's failure to suture properly [Goff v. Doctors Hospital, 166 Cal. App. 2d 376, 333 P. 2d 29 (1958)]. On one legal theory or another, the courts have been saying for some time that a hospital is responsible to the patient for knowing what is going on professionally within its walls and for demanding high standards of care.

Aid of computer systems

This leads to another basic principle. The medical staff must establish high standards of practice and it must effectively enforce and maintain them through its bylaws and its staff organization. This implies the necessity for a conscientious, continuous, and systematic review of the clinical practice in the institution. There are many approaches to this problem, but in all of them, whether they like it or not, physicians must express their critical judgment of the work performed by their colleagues. Happily, effective computer systems are available to assist the physicians in the more tedious aspects of the task and to insure an objective and impartial selection of cases for critical review. More significantly, computers can now give any hospital staff, regardless of size, anonymous statistical comparisons of many facets of its work with that in hundreds of similar hospitals across the nation.

Traditionally, the hospital staff has elected its own leaders from among its membership with the chief of staff and other responsible positions often rotating on an annual basis. Not infrequently, elections have been decided not on merit but on considerations far removed from ability to provide able and impartial leadership. These situations are no longer tenable under any circumstances. At times, it may be expecting too much to hope for effective leadership from a busy physician who must continue to earn his living in practice, and who is untrained and inexperienced in management processes. The problems are compounded when the tenure in office is but a year or two. All too often, the chief of staff has not even seen the bylaws, and seldom does he fully understand the table of organization of the institution or the structure and function of standing committees. Unless he is willing to accept guidance and support from an able administrator, medical staff functions may deteriorate and become stagnant and ineffective. The staff may find itself at a serious disadvantage in relationship to the trained management personnel usually found in the administration and the governing board of modern hospitals, and finally it may become adept only at blocking actions without any positive program of its own. The medical staff is too important a cog in the complexity of the modern hospital for its vital function to be left to happenstance or to well-meaning but haphazard leadership.

Medical staff function

As an antidote, a trend is emerging for the hospital staff affairs to be guided by a salaried medical director. In essence, he is a full-time chief of staff. Ideally, he is a clinician who is mature but still in his prime, who has stature, and who has been trained in administration. Not the least of his responsibilities is to provide leadership and expert knowledge to the staff in their continuing self-evaluation of clinical practice. He leads and coordinates staff activities, but by no means does he assume the staff's functions or responsibilities. Many of the larger hospitals have found it desirable to employ additional salaried physicians to serve as chiefs of major clinical services, especially when there is an active house staff program. This further increases the effectiveness of staff function as well as improves the educational programs for house staff and attending staff alike.

The chief of staff is responsible to the governing board of the hospital, and to it alone, whatever his title, whether or not he is salaried, and whether or not he is elected by the staff. This is another frequently misunderstood basic principle. It is especially confusing when the chief is elected by the staff and he mistakenly believes that he is primarily beholden to his electorate. For this and other reasons, it is well for the governing body to appoint the chief of staff directly. Obviously the appointment should be made in consultation and in collaboration with the medical staff, but the responsibility and the prerogative rest with the board. It is appropriate for the staff to elect additional officers including its own president who serves as the voice of the staff.

Finally, the importance of an adequate and up-to-date set of medical staff bylaws deserves strong emphasis. The bylaws should be drafted to meet the specific needs of the individual staff, they must be explicit, and they must cover all staff functions. Further, they must be reviewed and revised frequently to meet the changing needs of a growing staff. As in all other hospital affairs, the medical staff bylaws are the final responsibility of the governing board. The bylaws must be approved by the board before they become valid, and it is important that they be made a part of the hospital's own bylaws.

In summary, certian basic principles of medical staff function are becoming better understood and are receiving deserved emphasis. The hospital is a single organization, not separate ones for the medical staff and for the administration. The governing board is legally and morally responsible for all that takes place in the hospital, including the professional standards and the quality of patient care. The medical staff must conscientiously and systematically review its clinical practice to assure the maintenance of high standards of practice. The chief of staff, whether salaried or not, is responsible to the governing board and to it alone. The appointment of a full-time salaried medical director to lead, coordinate, and stimulate medical staff function is a salutary trend. In some institutions, his leadership is supplemented by full-time chiefs of major clinical services. Finally, a precise, detailed, inclusive, and up-to-date set of medical staff bylaws is an essential document, and it must be approved and adopted by the governing board as well as by the medical staff. •

ACKNOWLEDGMENT

I would be remiss if I did not give credit to the source of my material. I have drawn freely upon the newly published book, Eisele, C. W., *The Medical Staff in the Modern Hospital*, McGraw-Hill Co., New York, 1967. I have relied especially on chapters by Arthur F. Southwick, Ronald D. Yaw, and Kenneth J. Williams, M.D.

Management of the pregnant diabetic*

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In spite of advances in diabetic therapy, the pregnant diabetic is a challenge for both practitioner and researcher.

BEFORE THE DISCOVERY OF INSULIN and its use in treating diabetes mellitus, few diabetic females became pregnant and of those who did, many succumbed to ketoacidosis during pregnancy. Even fewer diabetic patients were able to carry a baby to the third trimester. In spite of all the advances in diabetic therapy, the pregnant diabetic and her offspring constitute a challenge for the practicing physician and researcher, alike. There are two aspects of the problem of diabetes and pregnancy: first, the effects of diabetes on the outcome of pregnancy and, second, the changes in the patient's diabetes produced by pregnancy.

Pregnancy appears in many respects to be diabetogenic. The incidence of diabetes increases with the age and parity of the patient. Many insulin-requiring diabetics will need a higher dose of insulin, particularly during the third trimester of pregnancy. A latent diabetic state may be unmasked during pregnancy. The diabetogenic factors of pregnancy are unknown. There is increased secretion of growth hormone, adrenal corticosteroids, estrogen and progesterone, all of which at times have been incriminated in causing impaired carbohydrate tolerance. Recently a placental hormone has been described which impairs carbohydrate metabolism; this hormone has been designated as human placental lactogen.

The effect of diabetes on pregnancy is clearly the more important aspect of this overall problem. Maternal mortality does not seem to be any higher in the diabetic female than in the non-diabetic save for that circumstance in which the patient has coronary artery disease, hypertension or impaired renal function. On the other hand, maternal morbidity may constitute a rather serious problem, particularly with regard to retinopathy or extensive diabetic nephropathy. If the patient has a malignant form of retinopathy characterized by active vitreous hemorrhaging, neovascularization and retinitis proliferans, marked diminution of visual acuity may occur during pregnancy. While a number of patients may regain some of their lost vision following delivery, it is common for the patient to sustain rather permanent ocular damage. For many years this malignant retinopathy constituted an indication for therapeutic abortion in the pregnant diabetic.

If the patient has severe diabetic nephropathy, this condition may progress relentlessly during pregnancy and ultimately lead to the patient's demise. When dealing with renal disease in the pregnant diabetic, it is vital to make the differential diagnosis between intercapillary glomerulosclerosis, preeclampsia or toxemia, and pyelonephritis, the latter representing treatable conditions. The diabetic female is likely to have increased difficulties with preeclampsia, toxemia, polyhydramnios and intrauterine fetal death.

In addition to the problems seen in the diabetic mother, special care has to be given the newborn. These babies are delivered early to prevent the catastrophe of intrauterine death, and consequently many are premature. They may demonstrate rather characteristic macrosomia with increased deposition of adipose tissue and marked edema. Consequently, a diabetic female may deliver a very large baby, weighing 10 to 13 pounds yet the infant may be physiologically immature. Children

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born of diabetic mothers have an increased incidence of the acute respiratory distress syndrome (hyaline membrance disease). Because of islet cell hyperplasia, these babies may develop significant hypoglycemia in the postpartum period.

On the basis of present knowledge, it is difficult to explain why the diabetic female has such a difficult pregnancy and why many children born of diabetic mothers fare so poorly. Neither hyper- nor hypoglycemia seem to present any significant hazard to the outcome of the pregnancy. However, the development of diabetic ketoacidosis is associated with increased fetal mortality.

The question of whether the various sex hormones play any role in determining the outcome of the diabetic pregnancy is still debated and unresolved. In measuring various sex hormones (estriol, pregnandiol, etc.) one demonstrates that the diabetic female does not elaborate the same quantity of these hormones during the course of pregnancy as her non-diabetic sister. This failure to secrete proper amounts of sex hormones in the diabetic female probably represents placental malfunction and not a humoral insufficiency state which needs to be treated. While the level of sex hormones may be low in the diabetic female, replacement of these hormones will not correct the various other abnormalities of placental function which may be present. One might conjecture that giving sex hormones in the treatment of the pregnant diabetic is analagous to treating the cough of the pneumoccal pneumonia with codeine. One may correct the symptom without improving the basic disease process.

The evidence appears striking that the most significant factor which determines the outcome of pregnancy in the diabetic female is the extent of vascular disease. The greater the duration of diabetes, the more extensive the vascular disease, the more likely the patient is to have an unsuccessful pregnancy. For this reason Dr. Priscilla White of Boston devised a classification of pregnant diabetics which is useful not only in terms of prognosis, but also provides a good indication as to what therapy must be employed (Table 1). As one progresses from Class A, those patients who have only an abnormal glucose tolerance test, to the patients who manifest diabetes associated with vascular disease, for example Class F, increasing fetal mortality and spontaneous abortion are observed. The mechanism by which extensive vascular disease produces increasing fetal difficulties is unknown, but presumably this is related to vascular insufficiency involving the placenta with the subsequent development of placental anoxia and malfunction.

TABLE 1

Class A	Abnormal glucose tolerance test—carbohydrate abnormality may be present only during pregnancy.
Class B	Onset of diabetes after age 20 years Less than 10 years duration No clinical evidence of vascular changes
Class C	Onset of diabetes before age 20 years Duration of diabetes greater than 10 years No vascular changes
Class D	Onset of diabetes before age 10 years Diabetics showing vascular lesions, i.e., retinopathy, calcification of leg vessels
Class E	Pelvic calcification in iliacs or uterine vessels
Class F	Diabetic nephropathy—azotemia Albuminuria present
Class R	Evidence of proliferating retinopathy

Table 2 lists some of the broad principles which must be considered in the management of the pregnant diabetic. One attempts to achieve as good chemical control of diabetes as is practically possible. This helps to prevent the development of ketoacidosis, which constitutes a major threat to fetal survival.

TABLE 2

Management of the Diabetic Pregnancy

1. *Physiological control of diabetes*
   Insulin if necessary
   Oral hypoglycemic agents not recommended
2. *Diet*
   Total daily caloric intake—30 Cal/Kg.
   Carbohydrate—50 gms. plus usual allowance
   Protein—2 gms/kg.
   Fat—remainder caloric allotment
   Sodium—restricted to 1200-1800 mg daily
   Desired weight gain—less than 12-13 pounds during pregnancy
3. *Prevent edema, hydramnios, possible toxemia*
   Thiazide diuretic
   Mercurial diuretics
4. *Female sex hormones*
5. *Delivery*
   Timing
   Method
   Insulin dose
   Possible use of fructose
6. *Management of the newborn*
   Premature nursery
   Possible use of fructose

If dietary control is not sufficient for maintenance of normal blood glucose levels, insulin therapy may be necessary. Although the evidence is not clearcut, the oral hypoglycemic agents are not recommended for the management of diabetes in this setting because of their possible teratogenicity. Indeed, it has been stated that these agents should not be administered to women of child-bearing age.

During pregnancy, the renal threshold for glucose may be lowered. It is imperative that blood glucose values be obtained to assess the state of diabetic control rather than rely on the urine glucose determination. Ketonuria may occur during pregnancy and does not necessarily signify poor diabetic control.

The total daily caloric intake should be in the range of 30 calories per kilogram. The patient should take her usual carbohydrate allowance plus an additional 50 grams daily. The protein content of the diet should be 2 grams per kilogram, and the fat should make up the remainder of the caloric allotment. These diets should be restricted in sodium content in an attempt to prevent development of any significant edema. The patient should not gain more than 12-13 pounds of weight during the pregnancy.

Use of hormones

Thiazide and mercurial diuretics can be administered to diminish edema. Thiazide or mercurial diuretics probably do not prevent or decrease polyhydramnios when present. There has been some suggestion that the thiazide diuretics might prevent the development of toxemia, but this is not proven.

The question of the use of female sex hormones has already been alluded to. Often in the case of repeated pregnancy failures, a physician feels compelled to place patients on a therapeutic trial of hormones and then a successful pregnancy ensues. Whether hormones have been helpful under this circumstance is doubtful, since it is well established that with repeated pregnancies many diabetics eventually may have a successful outcome.

Of all the factors which are critical in the management of the pregnant diabetic, the most outstanding one is the timing of delivery. If the child is left in utero, intrauterine death may occur, presumably due to placental insufficiency. On the other hand, if the child is delivered too prematurely, its survival outside of the uterus may be greatly threatened.

Delivery of diabetics

There is no precise way of determining when to deliver the child of a diabetic mother and various approaches have been employed. Estimating fetal size by palpation often leads to multiple errors. Recently, the use of ultrasound and x-ray pelvimetry has led to increased accuracy in terms of estimating fetal size. It is hoped that this method will enable the physician to determine more precisely when the infant should be delivered. Urinary estriol measurements may provide some guide as to placental function. When urinary estriol levels fall below 4 mg/24 hours, the baby should be delivered promptly. If one observes a progressive fall in urinary estriol measurements, this may constitute an indication for early delivery. The unfortunate aspect of measuring urinary estriol levels is that this is a determination which is not readily available. Furthermore, urinary estriol levels would have to be repeated so frequently as to make this somewhat impractical. Many obstetricians have felt that the urinary estriol measurements only provided indication of placental failure in the setting of toxemia or significant renal disease.

On the basis of clinical experience, the infants of diabetic mothers should be delivered according to a schedule as dictated by the duration and severity of their diabetes (see Table 1). For example, in many centers Class A diabetics are delivered from the 38th to the 40th week, patients in Class B are delivered at the end of the 37th week of gestation, and patients in Class C between 36 and 37 weeks. Patients who have vascular complications, Classes D and E, should usually be delivered during the 36th week. The Class F diabetic who has azotemia should not be carried beyond the 35th week. While these may be clinically useful criteria for deciding when to accomplish delivery, all too often, particularly in the diabetic population, it is difficult to determine the estimated date of confinement. In this setting other indices besides the menstrual history are used in

determining the week of gestation, such as the first perception by the patient of fetal activity, the date on which fetal heart sounds were first heard. X-ray films of the fetus in the third trimester are helpful but not necessarily diagnostic of fetal age.

The diabetic patient should be instructed that if fetal activity should subside suddenly, or if her insulin requirement should decrease precipitously, the physician should be contacted immediately because the fetus may be in difficulty. Likewise, a change in fetal heart tones may be a sign of impending death or difficulty.

The method of delivery will vary somewhat with the physician's preference. Suffice it to say that in most patients usually a trial of induction is attempted, albeit that an effort is made to avoid a prolonged labor or difficult operative pelvic delivery. Primary Cesarean section is undertaken when the results of induction are unsatisfactory, that is, when labor does not progress within a reasonable period of time.

With regard to the insulin dose during labor and subsequent delivery, one must be aware that the elevated insulin requirement observed during the third trimester may fall precipitously following delivery of the infant and placenta. In many centers half of the pre-pregnancy insulin dose is administered before delivery and depending upon the length of the delivery and labor, the other half given 12 hours later. If the insulin is given according to this schedule, the patient should be given an intravenous drip of 5 per cent dextrose in water in order to prevent hypoglycemia.

It is beyond the scope of this paper to discuss extensively the management of the newborn. Nevertheless, although these are large babies, from the standpoint of their physiology, many of them are premature and need careful observation. Consequently, children born of diabetic mothers should be admitted either to an observation nursery or to the premature nursery in order to receive special attention. Recently McCann and coworkers have reported that the administration of fructose to a diabetic mother will prevent hypoglycemia in the newborn. These authors suggest that the children born of diabetic mothers could be well treated with fructose in order to prevent significant hypoglycemia. Clearly, these babies can be treated with a constant infusion of glucose. The particular advantage that fructose offers is that it is slowly converted to glucose and it does not seem to stimulate the hyperplastic islets to release as much insulin as does glucose. More investigations will have to be undertaken to determine whether fructose therapy is indeed effective and useful in preventing and treating hypoglycemia in the newborn of diabetic females.

Summary

Various factors involved in producing the diabetogenic effects of pregnancy were discussed. Consideration was given to the effects of diabetes on the outcome of pregnancy. Attention was directed to those factors which are involved in producing an unfavorable pregnancy in the diabetic mother. The principles and guidelines to be used in managing a pregnant diabetic were reviewed, as well as some suggestions as to the care of the newborn. •

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"Patch" repair of large duodenal defects*

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Two patients with large duodenal defects underwent successful primary repair using an onlay patch of jejunum. This relatively simple procedure restores continuity without compromise of the lumen, avoids the pitfalls of direct closure, and the prolonged morbidity associated with indirect methods of treatment.

THE REPAIR of duodenal fistulas is attended by a high rate of complications and frequently poor results. Although prompt primary repair of acute fistulas is the treatment of choice and is often successful,[1,2,3,4,5,6] chronic duodenal fistulas and acute fistulas with a large defect in the duodenal wall do not lend themselves to a primary repair. In these situations, attempts at repair have proved technically difficult and have carried a high morbidity and mortality.[7,8] Indirect methods such as sump drainage, gastroenterostomy, and feeding jejunostomy have been employed most often in an attempt to avoid the problems of unsuccessful direct closure. The prolonged morbidity and convalescence associated with these indirect procedures leaves much to be desired.

In 1963, Kobold and Thal[9] described a technic for managing experimental wounds of the duodenum using an onlay patch of jejunum. This technic provided primary closure of large defects of the duodenum without interruption of continuity. This experimental work has been confirmed in other laboratories.[10,11] At the present time, clinical experience with this procedure has been limited to the use of the patch to reinforce a primary closure of the defect.[11,12] Two patients at the Colorado General Hospital have now undergone successful closure of large duodenal defects by using only an onlay patch.

*This paper is from the Department of Surgery, University of Colorado Medical Center. Dr. Elliott is Instructor in Surgery and Dr. Ashbaugh is Assistant Professor of Surgery.

CASE REPORTS

Case 1. A 23-year-old farm laborer sustained a blunt injury to the abdomen in an auto accident. The patient was admitted to a hospital shortly after the accident, and abdominal exploration was promptly performed. Although a large retroperitoneal hematoma with ecchymosis was noted, the retroperitoneal area was not surgically explored. Two days after the initial operation, a barium upper gastrointestinal roentgenographic examination demonstrated a fistula in the third portion of the duodenum. This fistula communicated with a large retroperitoneal abscess behind the ascending colon (Fig. 1). At a second operation, a sump drain was placed through the right flank into this abscess cavity. Sepsis and malnutrition continued; the skin around the drain was digested by the duodenal drainage. Three weeks after the initial injury, a gastrojejunostomy and tube jejunostomy for feeding were performed in an attempt to bypass the fistula. Suction catheters were placed in the duodenum both proximal and distal to the fistula (Fig. 2).

Following this operation, there was some initial improvement. The patient's weight stabilized temporarily at 41 Kg. The pre-injury weight was about 54 Kg. Over the next two months, however, recurrent bouts of sepsis and episodes of gastrointestinal hemorrhage caused further debilitation and the patient's weight dropped to 30 Kg. Three months following injury, the patient was transferred to Colorado General Hospital. On admission, the patient was cachetic, mentally depressed, and bedridden (Fig. 3). Upper gastrointestinal roentgenographic examination again demonstrated the large duodenal fistula communicating with a right-sided retroperitoneal abscess. Cultures taken from the right flank drain site grew out a mixed flora with Escherichia coli and Aerobacter aerogenes predominating. Staphylococcus aureus, coagulase positive, was repeatedly recovered from blood cultures. Specific antibiotic therapy resulted in subsidence of fever. Ten days after admission, a severe upper gastrointestinal hemorrhage occurred, requiring multiple transfusions. Blood was recovered from all tubes—stomach, duodenal, and jejunal.

The bleeding stopped spontaneously, following which an emergency upper gastrointestinal roentgenographic study demonstrated a gastric ulcer and a clot-filled abscess cavity. Recurrent hemorrhage two days later necessitated an emergency laparotomy. The stomach was opened and a 1.0 cm. ulcer was found on the lesser curvature. There was no bleeding from this ulcer. The hepatic flexure of the colon was mobilized, exposing the duodenal fistula and retrocolic abscess cavity.

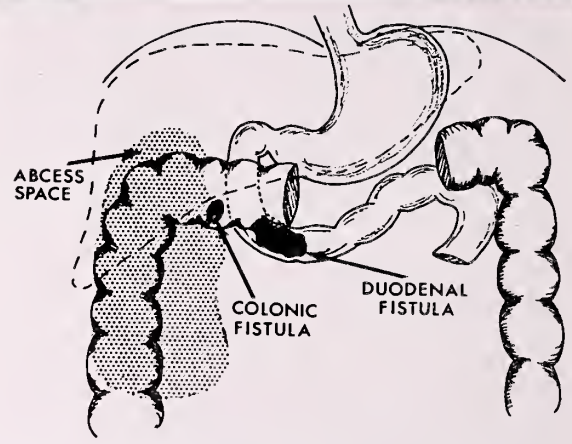

Fig. 1. A. Barium examination of the upper gastrointestinal tract demonstrating the duodenal fistula and abscess cavity. B. Diagrammatic drawing showing location of duodenal and colonic fistulas and abscess cavity.

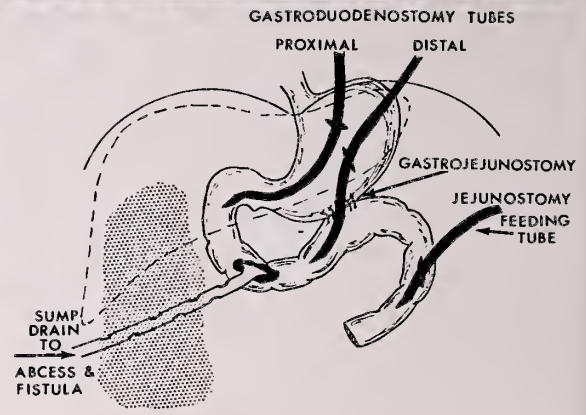

Fig. 2. A. Plain film of the abdomen demonstrating various drainage tubes and feeding jejunostomy. B. Diagrammatic drawing of the same situation.

Active arterial bleeding from the mesocolon was traced to the right colic artery which lay adjacent to the duodenal fistula and had apparently been eroded by the duodenal drainage. A 1.0 cm. fistula arising from the posterior surface of the splenic flexure of the colon communicated with the abscess cavity and duodenal fistula. The duodenal fistula measured about 2 x 3 cm., and comprised about one-half of the wall of the duodenum. The duodenal defect was directly over the vertebral column.

Bleeding from the right colic artery was controlled with suture ligature. The duodenal defect

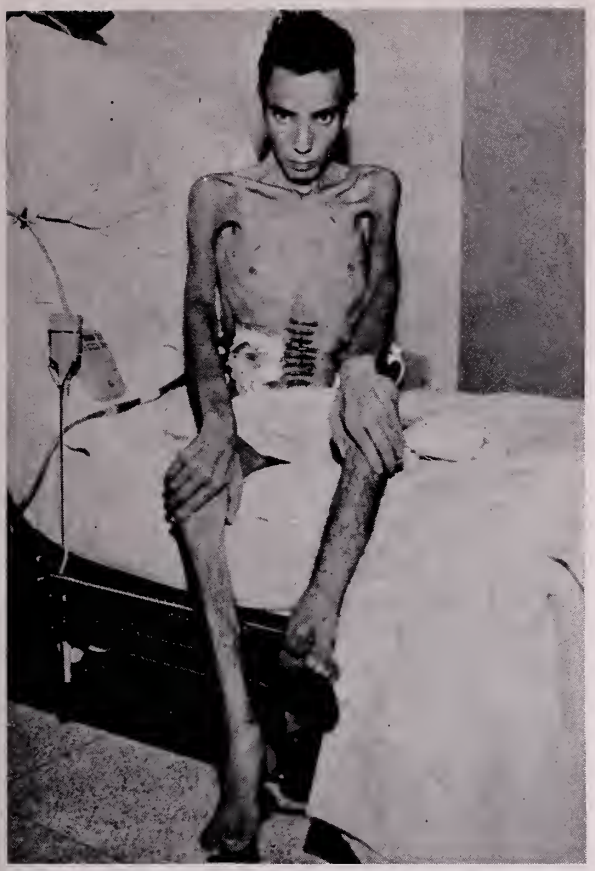

Fig. 3. The patient three months after injury, demonstrates the chronic malnutrition and debilitation commonly seen with long standing, duodenal fistula.

was closed by bringing a loop of jejunum through the mesocolon and suturing it over the fistula with interrupted 4-0 black silk sutures. No attempt was made to mobilize the duodenum or reduce the size of the defect since it was felt that such maneuvers would comprise the lumen of the duodenum. Vagotomy and pyloroplasty were performed and a gastrostomy tube placed to drain the stomach. The distal duodenum was decompressed with a Witzell-type jejunostomy tube threaded retrograde into the fourth portion of the duodenum. The operation was completely by exteriorizing the hepatic flexure of the colon containing the colonic fistula. The retrocolic abscess was evacuated of blood and pus, thoroughly irrigated, and drained (Fig. 4).

Postoperatively, there was no drainage of duodenal contents, and the course was entirely uncomplicated for nine days when fecal drainage appeared from the right flank. Digital exploration through the proximal limb of the colostomy confirmed the presence of a new colonic fistula. An upper gastrointestinal roentgenographic examination demonstrated an intact duodenum. Thereafter, the patient was maintained on a full diet and remained afebrile, but did not gain weight and the colonic fistula persisted.

Seven weeks after closure of the duodenal

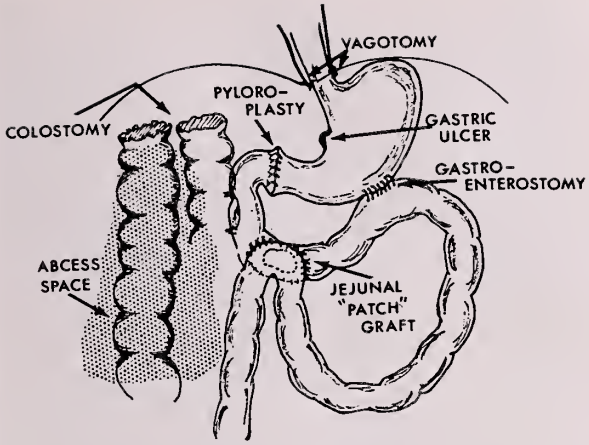

Fig. 4. Diagrammatic representation of the anatomical situation following closure of the fistula with a jejunal patch. Vagotomy and pyloroplasty and colostomy have also been accomplished.

fistula, an end-to-side ileo-transverse colostomy was performed to bypass the ascending colon. The jejunal onlay patch was not visualized at this operation (Fig. 5). Following this procedure, the fecal fistula promptly closed, the patient gained weight, and was discharged home for further convalescence.

Two months after discharge, the patient was electively re-admitted for resection of the ascending colon and the colostomy. His weight at this time was 53 Kg., just 1 Kg. below his pre-injury weight, and he felt well (Fig. 6). Removal of the ascending colon and hepatic flexure exposed the jejunal patch which was well-healed (Fig. 7). The postoperative course was complicated by a minor wound infection. The patient is now one year postinjury and has returned to his former employment as a farm laborer.

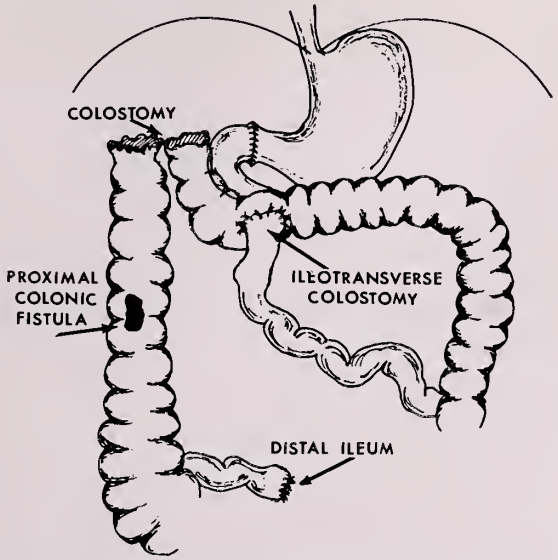

Fig. 5. Diagrammatic representation of the anatomical situation following ileo transverse colostomy to bypass the proximal colonic fistula. Jejunal patch graft is not shown.

Fig. 6. The patient before the final procedure showing the colostomy appliance. Normal weight has been regained.

Case 2. A 60-year-old farmer entered the hospital with history of peptic ulcer for 16 years. In 1951, a duodenal perforation was repaired, and in 1957 he had laparotomy for division of adhesion. For three months before admission he had had numerous bouts of vomiting and on one occasion vomited blood. Roentgenographic examination of the stomach demonstrated a deformed duodenum and a widened "c" loop. Symptoms rapidly subsided on diet and anti-acids, but repeated stool specimens were positive for occult blood. Histamine stimulation of acid secretion resulted in the production of 16 mEq. of free acid and 18.4 mEq. total acid per hour. Persistence of occult bleeding and possibility of tumor were indications for operation. The patient underwent vagectomy and antrectomy and continuity was restored by a gastro-duodenostomy. Pyloric and gastric ulcers were found in the specimen. The operation was uneventful and his immediate postoperative course was satisfactory. He was begun on clear liquids on the fourth postoperative day and advanced to low residue 6-feeding diet by his seventh postoperative day. On his ninth postoperative day he complained of shoulder pain. Over the next two days this pain persisted. Roentgenograms demonstrated free air under the diaphragms. On re-exploration of the abdomen a 2 cm. defect was found in the anterior wall of

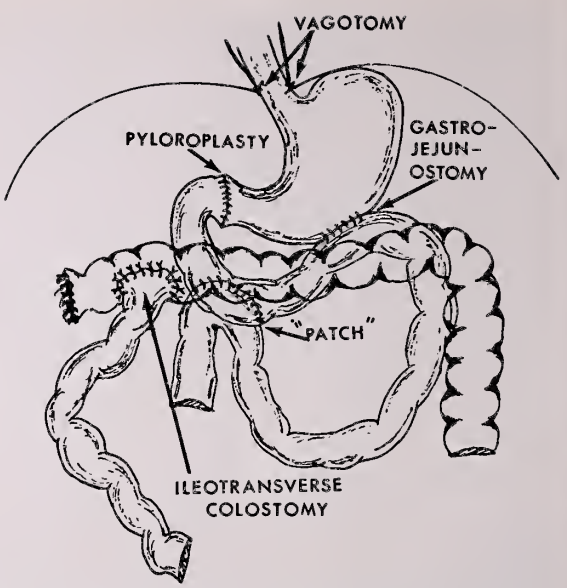

Fig. 7. Diagrammatic representation of the final anatomic situation following resection of the ascending colon and colostomy.

the duodenum adjacent to the anastomosis. The remainder of the anastomosis appeared intact. A loop of proximal jejunum was sutured over the defect using one layer of interrupted 4/0 silk sutures. No attempt was made to approximate edges of the defect by suture. A feeding jejunostomy was placed proximal to the patch, and the abdomen was closed after thorough irrigation with normal saline. The postoperative course was uncomplicated. Jejunostomy feedings were begun on the fifth postoperative day. A dye contrast study of the stomach was done on the eighth postoperative day and demonstrated a patent anastomosis without evidence of leak. Oral feedings were begun on the 13th day and were rapidly advanced to a 6-feeding bland diet. The jejunostomy tube was pulled on the 15th day and the patient was discharged from the hospital on the 19th postoperative day. He was last seen four months after his operation and was entirely asymptomatic. He had gained 18 pounds in weight and ate all foods without discomfort.

Comment: This fistula probably resulted from devascularization of a portion of the duodenum. Repair in the acute stage using the patch technic was accomplished without difficulty and avoided the need for a new anastomosis.

Discussion

General management of the patient with a large duodenal fistula is frequently complicated by the loss of large volumes of fluids and electrolytes, sepsis, and progressive malnutrition. Pancreatitis, jaundice, hemorrhage, and skin necrosis are common.[7,13] Duodenal fistulas differ from other intestinal fistulas, at least in degree, in the following ways:

1. Large volumes of fluid pass through the duodenum.

2. Intraluminal pressures in the duodenum are high with an average range of 30 to 75 cm/H_2O, and a high 140 cm/H_2O in normal subjects.[14]

3. The digestive action of the pancreatic and duodenal enzymes interferes with healing of the fistula.

4. Duodenal mucosa tends to pout out of the defect, producing a mucosal lined fistula.

5. The defects tend to be of relatively large size, often comprising one-half or more of the duodenal circumference.

Direct suture closing of large defects is frequently unsuccessful. High intraluminal pressures may disrupt a fresh suture line and the proximity of the common bile duct and the pancreatic ducts limit mobilization, resection and anastomosis. The frequent presence of infection and the lack of a serosal layer on the retroperitoneal portion of the duodenum may comprise closure. Even if successful, primary closure of large defects may seriously narrow the lumen.

The use of a jejunal onlay patch offers the advantages of a direct attack on an established fistula and if successful avoids the fluid, electrolyte, and nutritional problems that arise.[15] Experimental work in animals has shown that the serosal surface of the jejunum effectively resists digestion, and an intact loop of bowel can, therefore, be used as a patch. The duodenal mucosa gradually grows out to cover the defect.[9,10,11] Use of this technic in humans has been limited. Wolfman, et al.,[11] used a jejunal onlay patch to re-enforce a primary closure of a lateral

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duodenal fistula. Ballinger, et al.,[12] have recently reported a similar case where a "patch" was used to re-enforce an incomplete primary closure. In the present patients, suture closure of the large defect was not attempted, and total reliance was placed on the jejunal onlay patch which formed a new duodenal wall. Even though one patch lay in the middle of an abscess cavity in a chronically debilitated patient, healing of the fistula was prompt and complete, demonstrating the effectiveness of the procedure.

The following features contribute to the success of this technic: (1) Resistance of the serosa of the jejunum to digestion; (2) preservation of maximum duodenal blood supply is assured since the patch can be placed without mobilization of the duodenum; (3) the duodenal lumen is not comprised; and (4) the suture line can be placed in healthy tissue away from the edges of the fistula.

The prompt recovery and rapid resumption of oral nutrition in both patients was gratifying, and confirmed the experimental and clinical observations of others.[9,10,11,12] The technical ease with which the procedure is accomplished, and the good results obtained, indicate that this procedure is a useful addition to the surgeon's armamentarium and is deserving of further clinical trials.

The co-existing communicating colonic fistula in the first patient bears mention. Benign duodeno-colic fistulas are rare. Starzl, et al.,[16] in 1959, were able to find 23 cases in the world literature and added one of their own. In 1963, Higgins[17] reported a case and cited evidence of 27 others. Most instances of duodeno-colic fistula occur with ulcerative or inflammatory disease. The present case is the first reported to have followed blunt trauma to the abdomen. •

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Infantile arteriosclerosis

George H. Khoury, MD, and
C. Richard Hawes, MD, Denver

GENERALIZED ARTERIOSCLEROSIS is a rare and fatal disease in infancy and childhood. The etiology is still unknown. In 1959, Moran, et al.,[1] reviewed the literature and summarized the findings in forty-four cases. Recently three more cases have been reported.[2, 3, 4] The disease also has been described as generalized arterial calcification[5, 6] and medial calcification of the arteries.[7] In the majority of cases the diagnosis was made at necropsy or a few days before death, so that the clinical course and progress of the disease has not been adequately documented.

This is a report of a 17-month-old girl with generalized arteriosclerosis in whom the diagnosis was suggested after radiologic demonstration of calcification in the arteries of the extremities four months prior to her death.

CASE REPORT

M. C. was admitted to Denver Children's Hospital at 13 months of age with anorexia, loss of weight, weakness and generalized body swelling and respiratory distress. Family history was noncontributory.

PHYSICAL EXAMINATION: The patient was acutely ill, extremely irritable and seemed to have generalized mascular tenderness so that she screamed when she was touched. Her lower extremities were always in a frogleg position. She weighed 20 pounds. Her temperature was 101° F., pulse 160/minute, respiratory rate 68/minute, and blood pressure 105/70. The skin was mottled and the lips were slightly dusky. There was periorbital swelling as well as non-pitting edema of the dorsum of both hands and feet. The left precordium was bulging. The cardiac P.M.I. was palpable in the fifth left intercostal space in the anterior axillary line. The heart tones were muffled, a gallop rhythm was present and a grade i/6 soft, systolic murmur was heard over the mitral area. There were bilateral basal inspiratory rales. The abdomen was slightly distended. The liver was palpable 5 cm. below the right costal margin and its edge was rounded and tender. There was generalized muscular wasting and tenderness especially around the knee joint. The extremities were hypotonic but the reflexes were present.

LABORATORY DATA: The hemoglobin was 12.3 gm. % and the white count was 14,300/cu. mm. with a normal differential. Urinalysis was normal. The electrocardiogram on admission was abnormal (Fig. 1a). A chest x-ray (Fig. 2) showed gross enlargement of the cardiac shadow. Scurvy was suggested because of the frogleg position and irritability and tenderness of the extremities. An x-ray of the wrists and knees showed no scurvy but vascular calcification was present (Fig. 3). The diagnosis of infantile arteriosclerosis was suspected. Serum oxalocetic transaminase was 169 units. Lactic acid dehydrogenase was 1220 units. Several blood calcium and phosphorus levels were within normal limits.

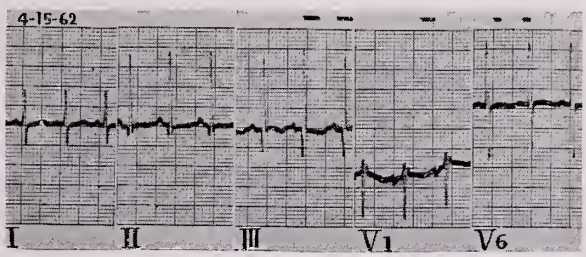

Fig. 1 (a). Electrocardiogram on admission. T waves flat in standard leads I, II, and V_6. P wave biphasic in V_1.

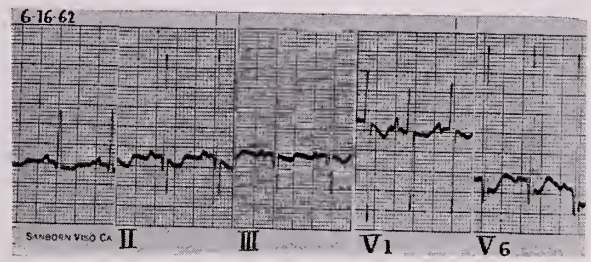

Fig. 1 (b). Electrocardiogram two months later (third admission) showing evidence of left ventricular hypertrophy.

HOSPITAL COURSE: The patient improved on oxygen, digitalis, antibiotics and mercuhydrin. A repeat cardiac x-ray revealed a diminution in the heart size. Lactic acid dehydrogenase dropped to 800 units. The patient's cardiac failure was controlled. She was discharged in fair condition on digoxin, nicotinic acid and skim milk formula to be readmitted two months later because of severe conjestive heart failure. Her final hospital course was a stormy one with intractable heart failure in spite of the decongestive measures. She had repeated episodes of cardiac dyspnea associated with cyanosis, excessive sweating and what seemed to be severe precordial pain. Serial electrocardiographic tracings were taken during that time but failed to reveal any evidence of myocardial infarction. They did show increasing left ventricular hypertrophy (Fig. 1b). She was extremely fussy and irritable, but was more comfortable in the knee-chest position. During the last three weeks she was kept on constant oxygen therapy and morphine. She died after a prolonged episode of cardiac asthma. An autopsy was performed four hours after death.

GROSS PATHOLOGY: The heart was greatly enlarged, weighing 206 gm. (normal 48 gm.). The coronary arteries were prominent, slightly tortuous and cordlike. The left ventricle was hypertrophied and firm. Its ventricular wall measured 10 mm. while the right ventricular wall measured 6 mm.

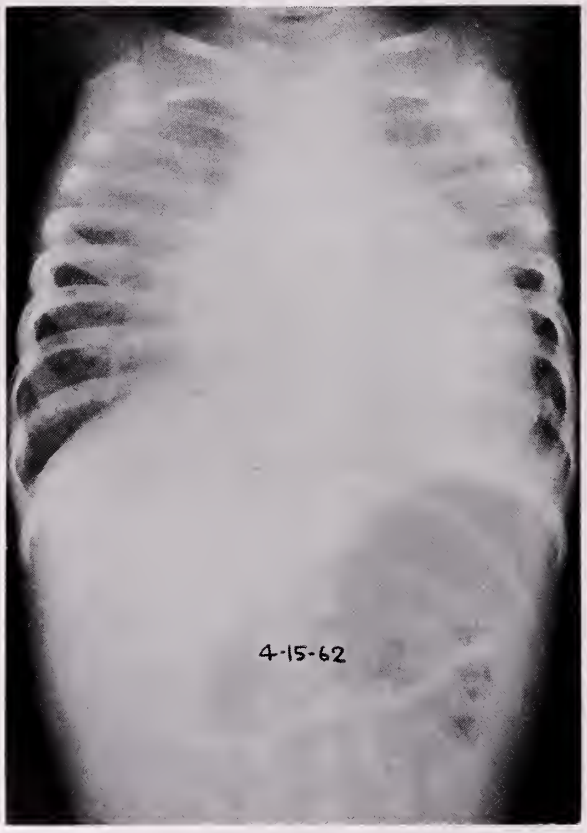

Fig. 2. Chest roentgenogram showing gross cardiac enlargement with pulmonary congestion and bilateral pleural fluid.

Fig. 3. Calcified arteries in the forearm.

The endocardium of the left ventricle was thickened and gray. There was a raised yellow plaque measuring 3 x 3 mm. in the left ventricular outflow tract. Examination of the remaining organs was unremarkable except for congestion.

HISTOLOGIC EXAMINATION: Calcifications and arteriosclerotic changes were seen in sections of the coronary arteries as well as in the small arteries of the lungs, mesentery, thyroid, kidneys, spleen and periadrenal tissues. The aorta, medium size arteries and small arterioles showed that the calcific process occurs in successive stages. In some sections, there was only thickening and fragmentation of the internal elastic lamina. In others, there were patchy or streaky deposits of basophilic granules of calcium salt in the media as there were calcific metachromatic bands encircling the wall of the artery (Figs. 4a and 4b). There was mild to severe fibroblastic proliferation of the intima. The left ventricle showed fibroblastic thickening of the endocardium. The myocardial cells were hypertrophied and edematous. No infarction was seen.

Comment

Several factors related to the etiology, clinical picture and prognosis of infantile arteriosclerosis merit discussion. Although many theories have been offered in previous case reports,[8, 9, 10, 11] the etiology of this disease remains obscure. Medial calcification of

the arteries has been noted in severe infections, syphilis, chronic renal disease,[6, 8] hypervitaminosis D,[12] hyperparathyroidism,[13] progeria, bone diseases with disturbance in the serum calcium and phosphorus[5, 14] and in allergic diseases.[15] Previous reports of familial incidence suggest a genetic factor.[16] Recently Stoetzer[17] postulated that anemia with secondary hypoxia may cause arteriosclerosis in infancy.

The basic lesions in infantile arteriosclerosis is a generalized involvement of the small, medium, and occasionally the large arteries. The histopathologic changes consist of thickening and fragmentation of the internal elastic lamina, followed by the appearance of basophilic calcium streaks or patches in the media. As the disease progresses, complete replacement of the media with calcific bands occurs. Fibroblastic proliferation of the intima may be either mild or severe enough to cause luminal occlusion. The association of endocardial fibroelastosis with generalized arteriosclerosis in our case has been described previously by Thomas, et al., in 1956.[18, 3, 6] It is uncertain which is the initial lesion.

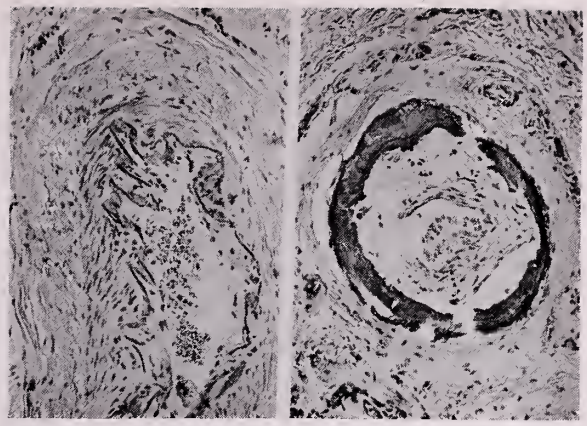

Fig. 4 (a). Medium sized arteriole with fragmented internal elastic lamina and hypertrophied media. (H&E stain. X 100)

Fig. 4 (b). Calcific band in the media with fibroblastic proliferation of the intimae. (H&E stain. X 100)

The age incidence of the disease varies from birth[9] to late childhood,[2, 6] but it is most common during the first few months. The clinical features are variable but usually pertain to the cardiovascular system. Loss of weight, fever, generalized weakness, pallor with cyanosis, respiratory distress and extreme irritability dominate. Cardiomegaly is

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invariably present. The heart tones are usually distant indicating poor myocardial function. Murmurs are inconstant. Muscular tenderness and weakness may be the result of poor blood supply. Extreme irritability, a withdrawn attitude, anginal pain and intractable heart failure characterized the final episode of the disease in our case.

The electrocardiogram is non-specific. It may be normal early in the disease. Signs of myocardial infarction have been described,[4, 18, 19] but were absent in our case. Enzymatic studies indicated myocardial involvement and ischemia. The differentiation of infantile arteriosclerosis from other causes of cardiomegaly such as: endocardial fibroelastosis, anomalous origin of the left coronary artery and glycogen storage disease of the heart, depends on the roentgenological demonstration of calcification along the path of the arteries.[20] The radiologic examination of the extremities appears to provide the most convincing evidence for the diagnosis of arteriosclerosis. The prognosis of infantile arteriosclerosis is grave. The course is relentless, deterioration ending in death in spite of therapy. In retrospect one wonders if chelating agents (EDTA) would have been effective in this particular case, as some successful results have been claimed with these agents in the treatment of adult atherosclerosis.[21]

Summary

The clinic course of infantile arteriosclerosis occurring in a 17-month-old girl has been reported and discussed. It is to be stressed that the diagnosis was established by the radiological demonstration of calcification in the arteries of the extremities. No cause was found to explain the mechanism of arteriosclerosis from either the laboratory data or the pathological findings. •

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ROBERT B. KING, M.D., Professor of Neurologicol Surgery, Stote University of New York, Syrocuse

Endacrine Eye Disease—Diagnasis
GILBERT W. CLEASBY, M.D., Director, Ophtholmologicol Residency Troining Progrom, Presbyterion Medicol Center, Son Froncisco

Luncheon Program — Cardiology in My Time

PAUL DUDLEY WHITE, M.D., Boston (Physicion to former President Dwight D. Eisenhower)

Afternoon

Hematalogy Withaut a Micrascape
STEVEN O. SCHWARTZ, M.D.

The Pathalogy af Deafness
JOHN E. BORDLEY, M.D.

Endacrine Eye Disease—Treatment
GILBERT W. CLEASBY, M.D.

Saurces af Diagnastic Errar in Patients Receiving Estrogens ar Oral Cantraceptives
DON H. NELSON, M.D.

Inducing Ovulatian With Human Menapausal Gonadatropin
HOWARD G. McQUARRIE, M.D.

Antibiatic Therapy of Cammanly Encauntered Infectians
WILLIAM M. M. KIRBY, M.D., Professor of Medicine, University of Woshington School of Medicine, Seottle

Thursday, September 14

Morning

Myxedema: Early and Late Manifestatians
THOMAS F. FRAWLEY, M.D., Professor ond Choirmon, Dept. of Internol Medicine, St. Louis University School of Medicine

Clinical Pharmacalagy of Newer Antibiatics
WILLIAM M. M. KIRBY, M.D.

Cervical Spandylasis
ROBERT B. KING, M.D.

Surgical Treatment of Spinal Cord Meningiomas
BRUCE F. SORENSEN, M.D.

A Report an 277 Intra-Arterial Infusions far Advanced Malignant Disease
CHARLES R. SMART, M.D.

Calcification in Malignant Tumars
DRS. HENRY P. PLENK ond ALLAN FREEMAN

Morpholagic Changes in Branchial Epithelium of Long-Term Cigarette Smakers
CYRIL D. FULLMER, M.D.

The Use af Enfaliative Cytalagy in Daily Medical Practice
HARLAN J. SPJUT, M.D., Professor Pothology, Boylor University College of Medicine

Luncheon Program
MEDICINE AND RELIGION

Afternoon

Hypaglycemic States
THOMAS F. FRAWLEY, M.D.

Camputer-Based Bedside Manitaring of Pastaperative Cardiac Patients
DRS. ALAN F. TORONTO, HOMER R. WARNER ond REED M. GARDNER

Camplicatians in Permanent Electrical Pacing af the Heart
DRS. C. HILMON CASTLE ond H. V. LIDDLE

The Carrelation af Selective Coronary Arteriagraphy and Clinical Symptams
HAROLD V. LIDDLE, M.D.

Esaphageal Reflux and Hiatal Hernia in Infants and Children
JUDSON G. RANDOLPH, M.D., Surgeon-in-Chief, Children's Hospitol of the District of Columbio

Cangenital Dislacatian af the Hip
PAUL A. PEMBERTON, M.D.

Current Cancepts and Therapy of Osteaparasis
JOHN E. BETHUNE, M.D.

Evening

Presidents' Reception ond Bonquet
Featured Speoker: THOMAS M. TIERNEY, Director, Bureau of Heolth Insuronce, Sacial Security Administration, Baltimare

Friday, September 15

Morning

The Noture of the Psychotheropeutic Process
JUDD MARMOR, M.D., Director, Division of Psychiatry, Cedars-Sinai Medicol Center, Los Angeles

Primory Prevention of Emotionol Illness ond the Schools
MERRITT H. EGAN, M.D.

The Volue of Vogotomy ond Droinoge Operotions for the Treotment of Duodenol Ulcer
RENE' MENGUY, M.D., Professar ond Choirman, Dept. af Surgery, University of Chicaga Schoal of Medicine

A New Concept in the Treotment of Hepatic Troumo
DRS. N. FREDERICK HICKEN, A. JAMES McALLISTER ond CHARLES EDWARDS

Polypoid Lesions of the Colon
HARLAN J. SPJUT, M.D.

Gross Diognosis of Pelvic Pothology ot the Operoting Table
JAMES A. MERRILL, M.D., Prafessor and Head, Dept. of Gynecalagy and Obstetrics, University of Oklahoma Medical Center

University of Utoh Experience in Renol Transplontotion
DRS. KEITH REEMTSMA and LAWRENCE E. STEVENS

Home Diolysis Versus Tronsplontation
WILLEM J. KOLFF, M.D.

Luncheon Progrom
NORAD (presented by U. S. Air Farce)

Afternoon

Gostric Mucus in the Etiology of Peptic Ulcer
RENE' MENGUY, M.D.

Some Vagaries of Endometriosis
JAMES A. MERRILL, M.D.

Trocheol Stenosis Due to Aberront Left Pulmonory Artery
DRS. CONRAD B. JENSEN and RUSSELL M. NELSON

Plastic Reconstruction of the Mitrol Valve
W. RAY RUMEL, M.D.

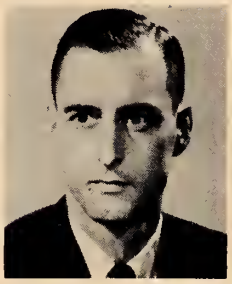
Intersexual Abnormolities
JUDSON G. RANDOLPH, M.D.

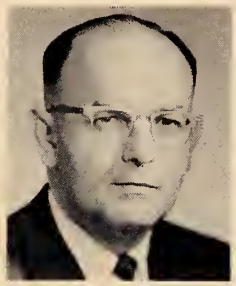
Chonging Gender Role Potterns in Contemporory Society
JUDD MARMOR, M.D.

Program Speakers

John E. Bethune, M.D.

Jahn E. Bordley, M.D.


G. W. Cleosby, M.D.

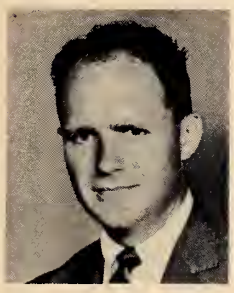

T. F. Frowley, M.D.

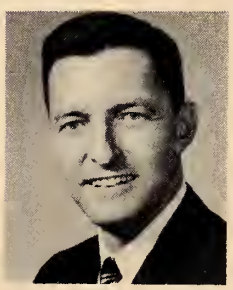
Robert B. King, M.D.

W. M. M. Kirby, M.D.

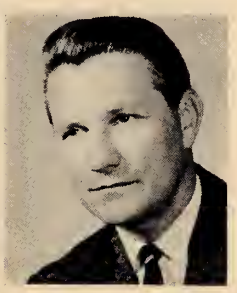
Judd Mormor, M.D.

Rene' Menguy, M.D.


J. A. Merrill, M.D.


J. G. Randolph, M.D.

S. O. Schwortz, M.D.


Harlon J. Spjut, M.D.

Paul D. White, M.D.

97th Annual Session — Colorado Medical Society

Wednesday through Saturday — September 20-23, 1967

The Broadmoor Hotel — Colorado Springs

(In cooperation with the following societies: Colorado Gynecological and Obstetrical Society, Colorado Society of Internal Medicine, Denver Academy of Surgery, Colorado Chapter of the American Academy of Pediatrics, Colorado Otolaryngological Society, Rocky Mountain Chapter of the Western Orthopedic Association.)

Wednesday, September 20

8:30 a.m.- 2:00 p.m.—Orientation Course

9:00 a.m.—Constitution, By-Laws and Credentials Committee

9:30 a.m.—Judicial Council

10:00 a.m.—House of Delegates

2:00 p.m.- 9:00 p.m.—Committee on Medicine and Religion-Workshop & Dinner

2:00 p.m.—Reference Committee Meetings

Thursday, September 21

9:00 a.m.—Medical Support of NASA Manned Spoce Flight Missions
DUANE CATTERSON, M.D.

10:30 a.m.—Panel on Shock
Participants:
WILLIAM C. SHOEMAKER, M.D.
ROBERT H. BARTER, M.D.
HERBERT SHUBIN, M.D.
ALVIN S. ISAACSON

6:30 p.m.—Annual Dinner Dance
Allen Uhles Orchestra

Friday, September 22

9:00 a.m.—Practitioners Role in the Planning of Medical Education
JOHN S. MILLIS, Ph.D.

10:30 a.m.—Role of Computers in the Monogement of Critically Ill Patient
HERBERT SHUBIN, M.D.

11:00 a.m.—Injuries About the Elbow Joint in Children
ALVIN S. ISAACSON, M.D.

11:30 a.m.—The Choice of a "New" or "Old" Antibiotic
ALLEN W. MATHIES, M.D., Ph.D.

12:00 noon—Initial Evoluation of the Severely Injured Patient
WILLIAM C. SHOEMAKER, M.D.

12:30 p.m.—COMPAC Luncheon

2:00 p.m.—House of Delegates

Stag Smaker—Golf Club

Saturday, September 23

8:00 a.m.—House of Delegates, installation of Officers

9:00 a.m.—Medicare Program
FRANCIS L. LAND, M.D.

10:30 a.m.—Masses of the Neck
RICHARD T. FARRIOR, M.D.

11:00 a.m.—The Changing Spectrum of Infectious Diseases
ALLEN W. MATHIES, M.D., Ph.D.

11:30 a.m.—Emotional Aspects of Vulvo Vaginitis
ROBERT H. BARTER, M.D.

12:00 noon—New Concepts in Laryngology
RICHARD T. FARRIOR, M.D.

DUANE CATTERSON, M.D.
Medical Assistant, Medical Research and Operations, NASA Manned Spacecraft Center, Houston, Texas

ALLEN W. MATHIES, JR., M.D., Ph.D.
Head Physician, Communicable Disease Service; Asst. Prof. of Pediatrics, University of Southern California

RICHARD T. FARRIOR, M.D.
Director, Otolaryngological Troining Program
Tampa General Hospitol,
Tampa, Florido

JOHN S. MILLIS, Ph.D.
President, Western Reserve University, Cleveland, Ohio

ALVIN S. ISAACSON, M.D.
Associate Head, Orthopedic Department of Children's Hospital of Los Angeles; Associate Clinicol Professor of Orthopaedics, University of Southern California

HERBERT SHUBIN, M.D.
Assistant Professor of Medicine, University of Southern California

PICTURES NOT AVAILABLE

ROBERT H. BARTER, M.D., Head, Ob-GYN Department, George Washington University School of Medicine, Washington, D. C.

WILLIAM C. SHOEMAKER, M.D., Director of Surgical Research, Hektoen Institute, Cook County Hospital, Chicago, Ill.

FRANCIS L. LAND, M.D.
Chief of Medical Division
Bureau Family Services
Washington, D. C.

Golf Tournament

September 20, 21, 22

West Course, Broadmoor Hotel

Prizes for best 18 and 36 holes of golf by teams of two golfers will be awarded on the bosis of:

1. Low gross score
2. Low net score (full hondicap). Established USGA handicaps will be used for the best low net score. Players without an established handicap will shoot a qualifying round; a handicap will be set by the Golf Committee.

Entry Fee: $25.00

Write Doctor Golf, 1809 E. 18th Avenue, Denver 80218 for full information and applicotion.

89th Annual Meeting
MONTANA MEDICAL ASSOCIATION
September 14 - 16, 1967
Missoula, Montana

The 89th Annual Meeting of the Montana Medical Association will convene in Missoula, the Garden City of Montana, on Thursday, Friday, and Saturday, September 14, 15, and 16. All physicians who are members of the American Medical Association are cordially invited and welcome to attend this annual meeting. There will be no registration fee.

All of the scientific and business sessions of the 89th Annual Meeting will be held in the Lodge on the campus of the University of Montana.

Preceding the annual meeting on Wednesday afternoon, September 13, the Western Montana Medical Society will sponsor a golf tournament, in which all physicians may participate. The tournament will commence at 1:00 o'clock at the Missoula Country Club. A number of valuable prizes, as well as the "Goodman Trophy," will be awarded. Participants in this tournament are urged to submit their entries promptly to the chairman, R. E. Wirth, M.D., 407 East Main Street, Missoula, Montana 59801, and to forward to him their handicap.

In addition to the golf tournament on Wednesday afternoon, a number of medical specialty groups, as well as committees of the Montana Medical Association, have scheduled meetings during the afternoon and evening hours on September 13.

The business sessions of the Association will convene at the Lodge between 8:30 o'clock and 10:00 o'clock on Thursday morning, September 14; between 3:45 o'clock and 5:30 o'clock on Friday afternoon, September 15; and from 10:45 o'clock on Saturday morning, September 16, until all business has been completed.

On Thursday evening, September 14, the annual reception and banquet of the Montana Medical Association will be held in the Bitterroot Room of the Florence Hotel. At the annual banquet this year, the living past presidents of the Montana Medical Association will be honored and will be guests of the Association. The reception will convene at 6:30 o'clock and the annual banquet at 7:30 o'clock. Charles P. Brooke, M.D., Missoula, will be the toastmaster on this occasion.

On Friday evening, September 15, the Montana Medical Political Action Committee will convene for dinner and a short business meeting in the Governor's Room of the Florence Hotel.

Other features of the 89th Annual Meeting will include a large array of interesting and educational commercial and scientific exhibits. All of these exhibits will be displayed in the Lodge on the campus of the University of Montana.

Scientific Program

Thursday, September 14

Morning

Progress Repart an the Regionol Medicol Progrom
FRANK L. McPHAIL, M.D., Director, Regionol Medical Progrom, Greot Falls, Montona

Pathogenesis af Grove's Disease
JAMES T. DOWLING, M.D., University of Woshington School of Medicine, Seattle

The Use of Rodioisotopes in Medicine
WELBY TAUXE, M.D., Moyo Clinic

Thursday, September 14

Afternoon

Medicol Considerations of Hypercolcemio
JAMES T. DOWLING, M.D.

Recent Developments in Clinicol Laborotories
WELBY TAUXE, M.D.

Nodulor Goiter ond Its Monogement
BROWN M. DOBYNS, M.D., Western Reserve University School of Medicine

Questian ond Answer Period
BROWN M. DOBYNS, M.D.
JAMES T. DOWLING, M.D.
WELBY TAUXE, M.D.

Friday, September 15

Morning

The Monogement of Introctoble Poin in General Proctice
JOHN J. BONICA, M.D., University of Washington School of Medicine, Seottle

Present Concepts of Exophtholmos ond Its Monogement
BROWN M. DOBYNS, M.D.

Froctures ond Dislocotions of the Faot
ELDON G. CHUINARD, M.D., University of Oregon Medical School, Portlond

Obstetrical Anolgesio ond Anesthesia
JOHN J. BONICA, M.D.

Friday, September 15

Afternoon

Ponel Discussion: Treatment of the Injured Man
JOHN J. BONICA, M.D.
ELDON G. CHUINARD, M.D.
BROWN M. DOBYNS, M.D.

Saturday, September 16

Morning

Coronory Core Units—Observotians, Implications ond Speculotions
HILLIARD J. KATZ, M.D., University of Californio School of Medicine, San Froncisco

Pulmonory Embolism—Something Old, Something New
HILLIARD J. KATZ, M.D.

The Officers of the Montana Medical Association are:

President:
A. L. VADHEIM, M.D., Bozemon

President-Elect:
ALFRED M. FULTON, M.D., Billings

Vice President:
MARK B. LISTERUD, M.D., Wolf Point

Secretory-Treosurer:
OSCAR A. SWENSON, M.D., Sidney

Assistont Secretory-Treasurer:
HUGH V. ANDERSON, M.D., Great Folls

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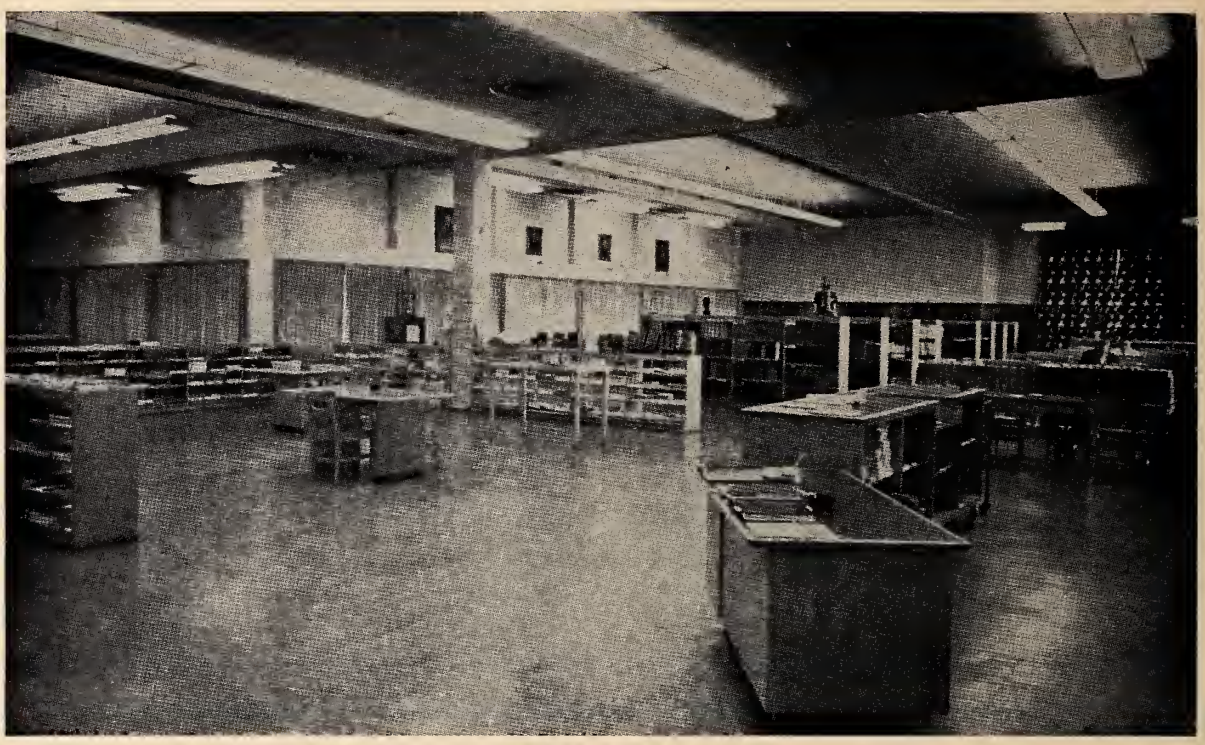


DENVER MEDICAL SOCIETY LIBRARY

The Denver Medical Society Library is ranked among the ten leading society-owned libraries in the country.

It is maintained and operated by its members for their use and, by reciprocal agreement with the Colorado Medical Society, for the use of physicians whose state Associations participate in the publication of the Rocky Mountain Medical Journal.

The collection contains approximately 50,000 volumes and receives more than 600 medical journals monthly.

The Library provides medical reference service (limited to a three-year search unless otherwise instructed). Physicians may come by, write, telephone or telegraph their requests for material. Items will be mailed on the day requested, if at all possible. Cost: Postal rates for "Educational Material," presently 10c first pound and 5c each additional pound or fraction. Photocopies of articles can be supplied at 10c per page.

Denver Medical Society Library, 1601 East 19th Avenue, Denver, Colorado 80218

Phone: 222-5817 (Area Code 303)

COLORADO

Dr. J. A. del Regato, Medical Director of the Penrose Cancer Hospital of Colorado Springs, has been appointed a member of the National Advisory Cancer Council. The Council is consulted by, and make their recommendations to, the Surgeon General of the United States Public Health Service, and concerns itself with plans for the encouragement, coordination and financing of cancer research, education and training in varied pertinent disciplines throughout the nation.

Members of the Council are chosen from among the leaders in the fields of education and medical sciences. Dr. del Regato has previously served the National Institutes of Health in various capacities, including membership in the Clinical Studies Panel and in the Cancer Chemotherapy Review Committee of the National Cancer Institute.

* * * *

Cardiovascular Disease Mortality Study

The Denver Department of Health and Hospitals is working with Johns Hopkins University on a study of cardiovascular disease mortality. The nationwide study is directed by Dr. Abraham M. Lillienfeld, Professor of Chronic Diseases at the School of Hygiene and Public Health of Johns Hopkins University, Baltimore, Md. Dr. Bertha L. Paegel, epidemiologist with the Denver Department of Health and Hospitals, is supervising the study in Denver.

Purpose of the study is to determine whether geographic differences in mortality from specific cardiovascular diseases are due to differences in certification of causes of death. Geographic areas of the U.S. with high, low and intermediate mortality rates are included in the study.

Investigators will work with carefully selected samples of death certificates, gathering information from medical records of hospitals and physicians, coroners' reports, and family interviews. Data gathered from all nine areas of the U.S. will be sent to Johns Hopkins for computer analysis.

MONTANA

Physicians in the News

Donald H. Cheever, M.D., a member of the staff of the Student Health Service at Montana State University, Bozeman, has volunteered to serve in Viet Nam. Dr. Cheever will be one of the volunteer physicians serving in Viet Nam from June 19-August 17, 1967. . . . Leonard W. Etchart, M.D., Billings, has been named a division chairman of the United Neighbors Campaign for 1967-68. . . . Joseph P. Orley, M.D., Lewistown, was recently named "Elk of the Year" because his "activities and conduct exemplify the highest ideals" of this fraternal order. . . . Winfield S. Wilder, M.D., Great Falls, has been appointed by the executive board of the Eastern Montana Regional Mental Health Board to serve as director of the mental health centers which will be established in Glasgow and Miles City.

* * * *

Montana Academy of General Practice

The members of the Montana Academy of General Practice at their annual meeting in Lewistown, June 15-17, installed George H. Gould, M.D., Kalispell, as president to succeed Oscar A. Swenson, M.D., Sidney. Edwin L. Stickney, M.D., Miles City, was named president-elect, Ward E. Benkelman, M.D., Polson, vice president, and R. D. Buchanan, M.D., Columbia Falls, secretary-treasurer.

UTAH

Dr. Paul Dudley White Tabernacle Speaker

Of considerable interest to the citizens of Utah and the surrounding areas is the announcement of the appearance of Dr. Paul Dudley White in the Salt Lake L.D.S. Tabernacle on Temple Square, September 13. This event is sponsored by the Utah Heart Association, which has also designated this day as "Hearts and Husbands" day. Dr. White will appear also as a speaker at the Utah State Medical Association's annual convention on that day.

In his Tabernacle appearance, Dr. White will discuss prevention of heart attacks, and also care, exercise, diet, sex and work after an attack. Appearing with him will be a panel of Utah physicians composed of Drs. Hiroshi Kuida, Homer R. Warner, Allan H. Barker, and Harold V. Liddle, with Ernest L. Wilkinson as moderator.

The program, a vital, educational one, is being offered to the general public free of cost. Women of Utah and surrounding areas will be invited and urged to attend with their husbands to learn how heart disease can affect their families.

Dr. White was clinical professor of medicine at Harvard University, and visiting physician and chief of the cardiovascular division of Massachusetts General Hospital in Boston. He is possibly best known as personal physician to former President Dwight D. Eisenhower during the President's heart attack.

USMA Briefs

Harold Bowman, executive secretary of the Utah State Medical Association, was named to the board of directors of the important American Association of Medical Society Executives at the recent annual AMA convention held in Atlantic City, New Jersey. The committee, which includes executive secretaries and directors from 50 states, is extremely important and active in carrying out American Medical Association programs at the state level.

The Utah State medical program, directed by Mr. Bowman, has set the pace in many regards. The "KO Polio" program of three years ago, the "Muzzle Measles" eradication program this spring, along with the "Medicine and Religion" program directed by Mr. Bowman, have gained wide recognition, Utah's measles eradication program, which resulted in 93 per cent immunization, was by far the most successful state-wide effort of this kind attempted, gaining recognition at the AMA convention. Utah's annual scientific conferences also are rated high by AMA leaders.

Mr. Bowman, in addition to his new assignment, is a member of the advisory committee of the AMA Department of Public Relations and a member of the Board of Directors of the Professional Convention Management Association.

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

Dr. C. Wesley Eisele, associate dean for postgraduate education in the University of Colorado School of Medicine, has been appointed to the new 16-man National Advisory Committee on Hospital Effectiveness by Secretary John W. Gardner of the Department of Health, Education and Welfare. The committee has been established to undertake a thorough analysis of hospital utilization throughout the nation, admission and dismissal methods, staffing practices, hospital design and construction, operating procedures and relationships with other community health facilities. It will also review the formula used for reimbursement of hospitals under the Medicare program. The committee's report is expected by November 1.

* * * *

The Board of Regents of the University of Colorado has created a Division of Biostatistics and Epidemiology in the C.U. School of Medicine and named Dr. Strother H. Walker as its head. The new division will create an administrative structure for work already under way in these fields.

The division will be a part of the Department of Preventive Medicine and Comprehensive Health Care, which is headed by Dr. John C. Cobb and will be involved in educational and research efforts in the fields of biostatistics and epidemiology and in related disciplines such as biomathematics, statistical methods and related biomedical studies.

Dr. Walker, a 1934 graduate of Harvard University, became an associate professor in the C.U. medical school last September. He holds a Ph.D. degree in biostatistics from Johns Hopkins University and had been in charge of the Statistics Group of the Operations Research Office there until he joined the CU faculty.

* * * *

A contract for construction of an eighth floor on the north wing of Colorado General Hospital to house organ transplant patients has been let to the Metro Construction Co. of Denver. The $247,000 addition will be built entirely with federal and private funds and does not involve expenditure of Colorado tax revenues. Construction is expected to begin immediately and to be complete by April 15 next year.

Based in the new wing will be the operations of a team of Medical Center surgeons, physicians and medical scientists which has been pioneering for more than five years on the new scientific frontier of surgically transplanting human organs.

Project director for the transplant unit is Dr. William R. Waddell, professor and chairman of the Department of Surgery in the C.U. School of Medicine. The overall clinical research center is under the direction of Dr. Dalton Jenkins, professor of medicine and a specialist in metabolic diseases.

* * * *

Appointment of Dr. Rolla B. Hill, Jr. as acting chairman of the Department of Pathology in the University of Colorado School of Medicine has been announced by Dr. John J. Conger, C.U. vice president for medical affairs and dean of the medical school. The appointment is effective September 1.

Dr. Hill, an associate professor of pathology, will take over administration of the department from Dr. Donald West King, who has resigned as professor and chairman to accept a similar post in the Columbia University College of Physicians and Surgeons, New York City. A member of the CU medical faculty since 1961, Dr. Hill holds a B.A. degree with distinction (1950) from the University of Rochester and his M.D. degree with honors (1955) from the University of Rochester School of Medicine.

* * * *

An allocation of $263,000 to support a long-term study of the basic biochemistry of living cells has been awarded to Dr. Cosmo G. Mackenzie, professor and chairman of the Department of Biochemistry in the University of Colorado School of Medicine, by the National Institute of Arthritis and Metabolic Diseases. The award will finance the last half of a continuing 10-year study in which

Dr. Mackenzie and his co-workers are investigating the control of lipid metabolism in mammalian cells.

The NAIMD granted $47,734 to Dr. Mackenzie to support his investigations during the coming year through next April 30. Approximately equal grants are allocated for the remaining four years of the project.

* * * *

A research grant of $2600 to the Division of Ophthalmology of the University of Colorado School of Medicine has been announced by the National and Colorado Societies for the Prevention of Blindness.

Dr. Philip P. Ellis, professor and head of the division, said the grant will continue the societies' support of a research project on "Factors Affecting Penetration of Certain Antibiotics into the Eye" which is being undertaken by Dr. Raymond E. Records, assistant professor of ophthalmology. The new grant will assist Dr. Records in his investigation of the ability of antibiotic drugs, including the newer semi-synthetic penicillins, to penetrate into the tissues and fluids of the eye to combat vision-threatening infections.

* * * *

Dr. Vadim P. Pavlov of Moscow, Russian orthopedic surgeon, was a visitor to the University of Colorado Medical Center during the week of June 12-16 as part of a two-month tour of the United States to study American methods in the diagnosis and treatment of arthritis. The Russian surgeon observed surgery at St. Joseph and General Rose Memorial Hospitals.

During his stay in Denver Dr. Pavlov also participated in ward rounds and observed arthritis clinic procedures at Colorado General Hospital, attended a staff conference at St. Joseph Hospital, conferred with the staff of the Division of Orthopedic Surgery of the CU medical school, and visited laboratories of the Division of Rheumatic Diseases.

MEETINGS

Pediatric Anesthesiology
January 26-28, 1968

The Childrens Hospital of Los Angeles will hold its 6th Clinical Conference in Pediatric Anesthesiology on January 26-28, 1968. The three-day program will be devoted to the anesthetic problems of the pediatric age group.

Additional information is available through the office of Wayne Herbert, M.D., Division of Anesthesiology, Childrens Hospital of Los Angeles, 4650 Sunset Boulevard, Los Angeles, California 90027.

* * * *

Neoplasia in Childhood

The Twelfth Annual Clinical Conference will be held at the University of Texas M. D. Anderson Hospital and Tumor Institute at Houston on November 9 and 10, 1967. Cosponsor of the conference with Anderson Hospital is the University of Texas Graduate School of Biomedical Sciences at Houston, Division of Continuing Education.

An outstanding group of speakers from institutions throughout the United States as well as guests from England and Canada will join staff members from the University of Texas M. D. Anderson Hospital and Tumor Institute at Houston in presenting the most current information on childhood cancer. Each speaker will also participate in discussion panels following each session.

* * * *

American Academy of General Practice
September 18-21, 1967

A frank exploration of the doctor-patient relationship is one of the highlights awaiting family doctors attending the 19th Annual Scientific Assembly of the American Academy of General Practice, September 18-21 in Dallas.

The big postgraduate educational meeting, which annually draws some 3,000 family doctors and 10,000 visitors to the convention city, is the second to be held in the southwestern hub city in 10 years and will be the Academy's first meeting in Dallas' Market Hall. The four-day program will feature 26 top speakers on such topics as estrogenic "cycling" of the after-40 woman, the young cardiac, maternal substitutes for the "unmothered" child of the working mother, medicine in the Mekong Delta and sexual aberrations. Doctors will have a chance to view more than 100 scientific exhibits in Market Hall. The scientific program will follow the annual meeting of the Academy's policy-making Congress of Delegates September 16-18 at the Statler-Hilton hotel in Dallas.

* * * *

American Academy of Pediatrics

The American Academy of Pediatrics will hold its 36th annual meeting in Washington, D. C., Oct. 21-26, 1967. The meeting will feature symposiums on manpower and graduate training, learning, advances in obstetrics of interest to pediatricians, vaccine progress and problems, and exciting developments in pediatrics.

The Academy meeting is open to physicians who are not pediatricians. Registration fees are $18.00 for Academy members, applicants to the Academy, applicants to the American Board of Pediatrics, nonmembers out of school less than five years, and physicians in the armed forces.

Registration fee for nonmember physicians out of school more than five years is $50.00.

Interested physicians may write the American Academy of Pediatrics, 1801 Hinman Avenue, Evanston, Ill., 60204, for a preliminary program and registration forms.

* * * *

American College of Chest Physicians 1967-68 Postgraduate Program

Cardiopulmonary Problems in Children
Holiday Inn, Chicago, Sept. 21-23, 1967
Clinical Cardiopulmonary Physiology
Knickerbocker Hotel, Chicago, Nov. 6-10, 1967
Diagnosis and Treatment of Diseases of the Heart and Lungs
Barbizon-Plaza, New York City, Nov. 13-17, 1967
Clinical Application of Cardiopulmonary Physiology
Ambassador Hotel, Los Angeles, Feb. 12-16, 1968
Diagnosis and Treatment of Cardiovascular and Pulmonary Diseases
Hotel Fontainbleu, Miami Beach, March 4-8, 1968
Cine Angiographic Techniques in Cardiovascular Disease
Cleveland Clinic, Cleveland, Ohio, April 29-May 1, 1968

For further information regarding the above courses, please contact the American College of Chest Physicians, 112 East Chestnut St., Chicago, Illinois 60611.

* * * *

Hahnemann Medical College and Hospital Future Meetings

General Internal Medicine
Oct. 4, 1967 through March 27, 1968—Wed. 1-4 p. m.
Directors: Wilbur W. Oaks, M.D., Daniel Mason, M.D., Sheldon R. Bender, M.D.
Hahnemann Medical College

A Current View of Congestive Heart Failure
Nov. 13-14, 1967
Director: Albert N. Brest, M.D.
Sheraton Hotel

Human Sexual Function and Dysfunction
Nov. 17-18, 1967
Director: Paul Jay Fink, M.D.
Marriott Motor Hotel

Psychodelic Drugs
March 18-20, 1968
Director: Paul Jay Fink, M.D.
Marriott Motor Hotel

Pre- and Postoperative Management of the Cardiopulmonary Patient
April 8-10, 1968
Directors: Joseph F. O'Malley, M.D., Wilbur W. Oaks, M.D.
Marriott Motor Hotel

Auscultation of the Heart
May 27-31, 1968
Directors: William Likoff, M.D., Bernard L. Segal, M.D.
Sheraton Hotel

Psychiatry in Internal Medicine
Nov. 18-20, 1968
Directors: Paul Jay Fink, M.D., Wilbur W. Oaks, M.D.
Sheraton Hotel

For further information concerning these meetings, contact the Director.

Exposition on Cancer Nov. 27-Dec. 3, 1967

A week-long exposition on research, treatment, diagnosis and detection of cancer will be held at the Denver Coliseum, November 27-December 3, 1967.

Sponsored by the Denver unit of the American Cancer Society, the Rocky Mountain Cancer Exposition is also designed to encourage young people of the Rocky Mountain area to seek careers in medicine and the allied professions.

Active support has been obtained from the Denver and Colorado medical, dental, veterinary and nursing groups.

The exposition, which follows the general pattern of the highly successful Colorado Health Fair of 1961, has received the official approval of the American Cancer Society and is expected to attract more than 100,000 persons during the week.

The following Denverites have been named to committee posts: Dr. Calvin Fisher, assistant general chairman; Dr. Marvin E. Johnson, exhibits chairman; Dr. Richard Granberg, membership chairman; Dr. Roy Reiger, dental coordinator; Dr. Francis T. Candlin, veterinarian coordinator, and Lillian Austin, RN, nursing coordinator.

The American Medical Association will send two exhibits—the "Transparent Woman" and "Life Begins" to the exposition while the American Cancer Society will send its World Fair exhibit on uterine cancer. The U. S. Food and Drug Administration's famous "Cancer Quackery" exhibit will be shown.

* * * *

Clinical Chemistry November 6-10, 1967

The University of Colorado School of Medicine is conducting a postgraduate course in Clinical Chemistry in Denver November 6-10, 1967. This course will cover current developments and topics of interest pertinent to the field of clinical chemistry. Several eminent guest speakers will participate.

The course is limited to 75 and preference will be given to directors of clinical chemistry laboratories. Tuition—$100.00.

For further details and a detailed program, write to: The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Ave., Denver, Colorado 80220.

* * * *

International College of Surgeons November 19-22, 1967

The Western Regional Meeting of the International College of Surgeons will be held at the Flamingo Hotel, Las Vegas, Nevada, November 19-22. The program is sponsored by the Southern California division of the college and will include scientific presentations concerning all fields of surgery and surgical specialties.

Society for Cryo-Ophthalmology
January 14-18, 1968

The second annual meeting of the Society for Cryo-Ophthalmology will be held in Miami Beach, January 14 to 18, 1968, with Dr. Jose Barraquer, of Bogota, Columbia, presiding. The program will include a session on retinal surgery, with Dr. Giambattista, of Rome, as the featured speaker. Dr. H. Fanta, of Vienna, will lead the discussion on cryoextraction of cataracts.

Those wishing to present papers at this meeting should submit title and brief abstract to Dr. John G. Bellows, executive secretary, 30 North Michigan Ave., Chicago, Illinois, 60602, at the earliest possible date.

* * * *

American College of Surgeons
September 8-9, 1967

The Montana-Wyoming Chapter of the American College of Surgeons will hold their Annual Meeting September 8-9 at Jenny Lake Lodge, Jackson Hole, Wyoming.

* * * *

Nevada State Medical Association
November 7-11, 1967

The 64th Annual Meeting of the Nevada State Medical Association will be held at the Sahara-Tahoe Hotel, South Lake Tahoe, November 7-11, 1967.

* * * *

Gastroenterology
November 2-4, 1967

The American College of Gastroenterology announces that its Annual Course in Postgraduate Gastroenterology will be given at The Biltmore in Los Angeles, Calif., on November 2-4, 1967.

The faculty for the course will be drawn from the medical schools in and around Los Angeles. The subject matter to be covered in the course will be, essentially, the advances in diagnosis and treatment of gastrointestinal diseases and a comprehensive discussion of diseases of the esophagus, stomach, pancreas, liver and gallbladder, colon and rectum.

For further information and enrollment write to the American College of Gastroenterology, 33 West 60th St., New York, N. Y. 10023.

* * * *

Exploring Unusual Atmospheres

The American Association for Inhalation Therapy will hold its 13th Annual Meeting and Lecture Series at the Statler Hilton, Los Angeles, California, November 12-17, 1967. The meeting's theme will be "Exploring Unusual Atmospheres."

Non-members interested in attending the meeting should request registration information from the Executive Secretary, A.A.I.T., 332 South Michigan Avenue, Room 904, Chicago, Illinois 60604.

Cancer Therapy
October 16-21, 1967

The University of Wisconsin Medical Center is conducting a course on Basic and Clinical Aspects of Therapy in Advanced Cancer, October 16-21, 1967. The purpose of the course is to demonstrate the practical clinical application of laboratory science discoveries in anti-cancer therapy. The orientation and experience from the course should be invaluable to physicians with starting or growing interest in controlling disseminated neoplasms.

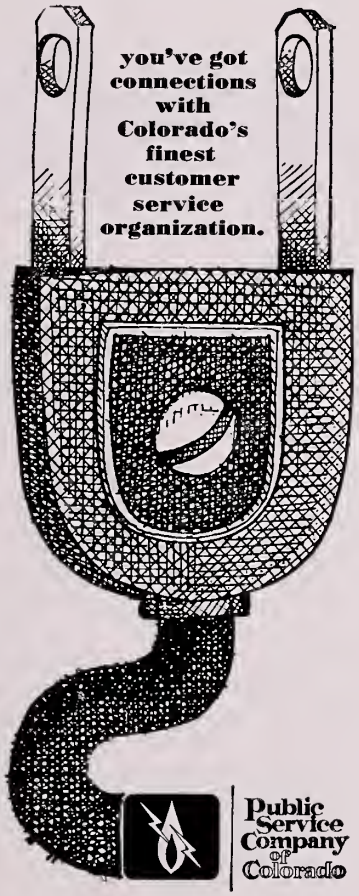
For further information on the course, contact R. J. Samp, M.D., Cancer Program Coordinator, University Hospitals, Madison, Wisconsin 53706.

* * * *

Laryngology and Bronchoesophagology
November 6-17, 1967

The Department of Otolaryngology of the Illinois Eye and Ear Infirmary and the College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in laryngology and bronchoesophagology from November 6 through 17, 1967. This course is limited to fifteen physicians and will be under the direction of Paul H. Holinger, M.D. It will be held at the new Illinois Eye and Ear Infirmary, 1855 W. Taylor St., Chicago.

Interested registrants will please write directly to the Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, P.O. Box 6998, Chicago, Illinois 60680.



OBITUARIES

Colorado

Dr. James L. Ryan died Sunday, June 25, 1967, at St. Anthony's Hospital, Denver, following a long illness in the 60th year of his life. He was born on November 2, 1907, at Blanchardville, Wisconsin. Dr. Ryan received his medical education at Marquette University in Milwaukee and later served a one-year internship in the Milwaukee County Hospital in Milwaukee, Wisconsin.

Still later Dr. Ryan did graduate work in the field of obstetrics and gynecology at the University of Pennsylvania in Philadelphia. He was licensed to practice medicine in Wisconsin in 1932, and for a time practiced at Sleepy Eye, Minnesota. In 1946 he came to Denver and continued in the practice of medicine in the Denver area until he was forced to retire because of ill health. During his years of medical practice he limited his practice to obstetrics and gynecology.

Dr. Ryan was a member of the Denver Medical Society, the Colorado Medical Society, and the American Medical Association. He was also a member of the Knights of Columbus, Lodge 539, the Catholic Order of Foresters, the Board of the Catholic Charities, and the Columbine Country Club.

He was married to Beatrice R. Bertrand of Sleepy Eye, Minnesota, on October 8, 1932. He is survived by his widow, two sons, Dr. James P. and Thomas P. Ryan of Littleton, and two sisters, Mrs. Maxine Caraway of Billings, Montana, and Mrs. Marilyn Jacobs of Freeport, Illinois.

Dr. James Halley White (generally known to his friends as Hal) died on Wednesday, June 21, 1967, in the Weld County General Hospital in his 62nd year of life. He was born in Salt Lake City, Utah, on May 21, 1906. He received his primary and secondary education in the public schools of California.

Later he prepared for medicine in the premedical department of Oklahoma Baptist University, and following this he studied medicine at the University of Oklahoma, where he earned both a Bachelor of Science and a Doctor of Medicine degree. He received his M.D. degree in 1934.

Dr. White interned in St. Paul's Hospital in Vancouver, British Columbia, 1934-1935. Following his internship he specialized in the public health field at the University of Indiana in Indianapolis and later at Tulane University in New Orleans, Louisiana, and Vanderbilt University in Nashville, Tennessee.

He began his public health career as public health officer in Lowndes County, Mississippi. He accepted a position as Director of Public Health for Weld County in 1952, and served in that capacity with great distinction up to the time of his death. He was instrumental in adding fluoride to the drinking water in Greeley and other nearby towns in Weld County. A survey in 1962 revealed that over 90 per cent of Weld County young people had been immunized against polio, largely through the activities of Dr. White.

His immunization record for Weld County and the fact that Weld County has been on the National Milk Honor Role for many years reflect Dr. White's sound philosophy of public health—a philosophy of constant and steady effort rather than crash programs.

In January, 1960, Dr. White was a pioneer in attacking the problem of highway deaths and injuries when he recommended the use of seat belts in all automobiles. More recently he was instrumental in establishing the home health care program in Weld County.

During World War II Dr. White served as Senior Surgeon in the United States Public Health Service and continued in the Public Health Service Reserve with the rank of Captain until the time of his death. He was licensed to practice medicine in Colorado in 1952, and in that same year he also joined the Weld County Medical Society and the Colorado Medical Society.

Dr. White was a Fellow of the American Medical Association, a charter member of the American Association of Public Health Physicians, a Fellow of the American Public Health Association, and a member of the Colorado Public Health Association. He was an active staff member of the Weld County General Hospital and took an active part in the civic affairs of his community. He was a member of the Greeley Elks Lodge No. 809, the Greeley Country Club, the Methodist Church, and the Republican Party.

He was married on December 21, 1933, to June Wyatt at Shawnee, Oklahoma. He is survived by his widow, a son, Stephen Halley White, a student at the University of Washington in Seattle, and two daughters, Mrs. George (Sally June) Salzman of Greeley, and Betsy Clark White, a student at Colorado State College, six grandchildren, and a sister, Mrs. A. A. Walker of Wewoka, Oklahoma.

New Mexico

Emmett Earl Royer, M.D., Albuquerque physician, died June 18, 1967, of a coronary illness. Dr. Royer was born in Bowling Green, Indiana, in 1889, and graduated from Hahnemann Medical College in 1912. He obtained his New Mexico license in 1915 and practiced in Albuquerque for more than 50 years.

Dr. Royer was until the time of his death a member of the Bernalillo County Medical Association, the New Mexico Medical Society and the American Medical Association.

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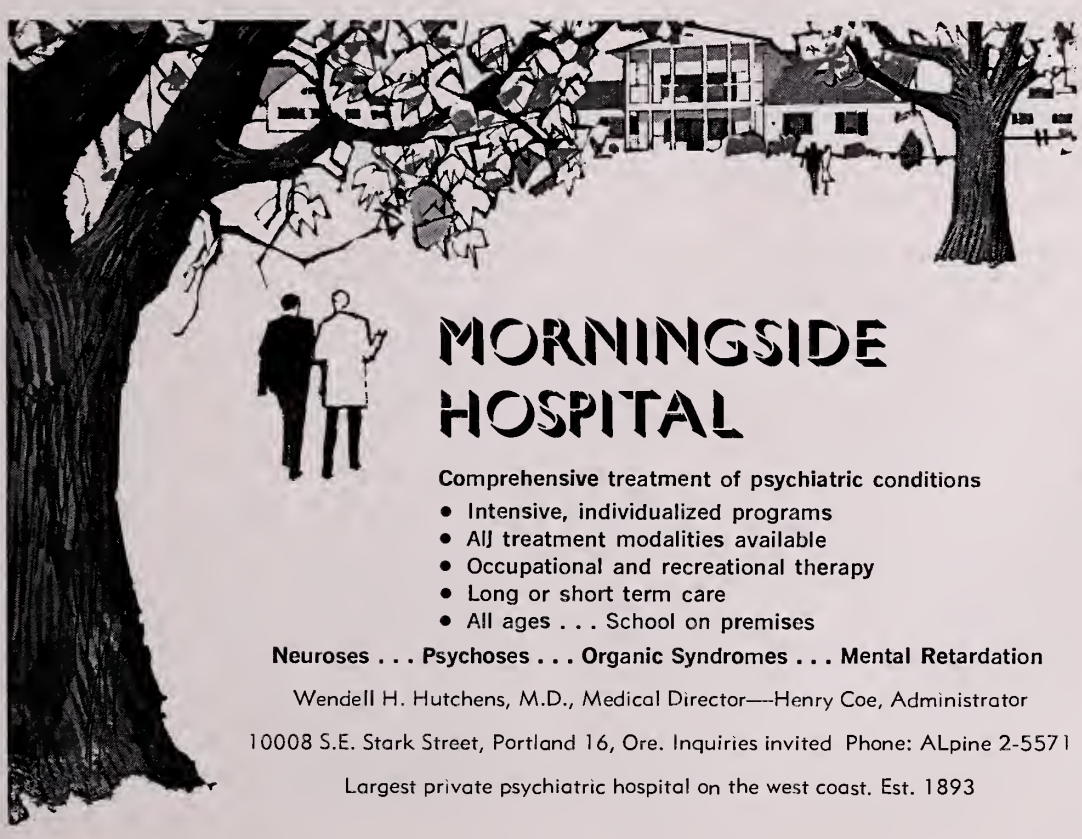

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New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Cecil-Loeb Textbook of Medicine: Edited by Paul B. Beeson. 12th ed. Phila., 1967, Saunders. 1738 p. Price: $20.50.

Effects of External Stimuli on Reproduction: Ciba Foundation Study Group. Boston, 1967, Little, Brown. 107 p. Price: Gift.

Handbook of Orthopaedic Surgery: By Alfred R. Shands. 7th ed. St. Louis, 1967, Mosby. 572 p. Price: $12.00.

Heart Disease in Infancy and Childhood: By John D. Keith. 2d ed. N. Y., 1967, Macmillan. 1239 p. Price: $35.00.

Infant Nutrition: By Samuel J. Fomon. Phila., 1967, Saunders. 299 p. Price: $10.50.

A Manual of Clinical Allergy: By John M. Sheldon. 2d ed. Phila., 1967, Saunders, 550 p. Price: $15.00.

The Militant Homosexual: By John Barry. N. Hollywood, Calif., 1967, Brandon House. 188 p. Price: $.95.

Monogolism: Ciba Foundation. Boston, 1967, Little, Brown. 99 p. Price: Gift.

Neuro-Ophthalmology Symposium of the University of Miami and the Bascom Palmer Eye Institute: Edited by J. Lawton Smith. v.3. St. Louis, 1967, Mosby. 349 p. Price: $25.00.

Optokinetic Nystagmus: By J. Lawton Smith. Springfield, Ill., 1963, Thomas. 141 p. Price: $6.75.

Our Inner Conflicts: By Karen Horney. N. Y., 1945, Norton. 250 p. Price: $5.95.

Parliamentary Law: By Henry M. Robert. N. Y., 1951, Appleton. 588 p. Price: $5.75.

Pathology: By Stanley L. Robbins, 3d ed. Phila., 1967, Saunders. 1434 p. Price: $20.50.

Psychoanalysis and Daseinsanalysis: By Medard Boss. N. Y., 1963, Basic Books. 295 p. Price: $8.50.

Psychology and the Human Dilemma: By Rollo May. Princeton, N. J., 1967, Van Nostrand. 221 p. Price: $5.95.

Radiation Therapy: By Walter T. Murphy. 2d ed. Phila., 1967, Saunders. 1020 p. Price: $45.00.

Reflections on Research and the Future of Medicine: Edited by Charles E. Lyght. N. Y., 1967, Blakiston. 210 p. Gift.

The Sex Chromatin: Edited by Keith L. Moore. Phila., 1966, Saunders. 474 p. Price: $16.00.

Synopsis of Pediatrics: By James G. Hughes. 2d ed. St. Louis, 1967, Mosby. 1099 p. Price: $10.85.

Treatment of Hyperthyroidism with Radioactive Iodine; A Twenty-Year Review: By John E. Kearns. Springfield, Ill., 1967, Thomas. 73 p. Price: $6.50.

Book Reviews

Communication Training in Childhood Brain Damage: By Merlin J. Mecham, Springfield, Ill., 1966, Thomas. 392 p. Price: $11.75.

Although this volume is intended mainly as a textbook for speech therapists, it also presents background material in such a manner that educators, psychologists, nurses, pediatricians and psychiatrists, especially child psychiatrists, can benefit from the content.

The initial chapters outline a definition of the neurological entity, cerebral palsy, as a part of the generic group, "brain damage." Diagnostic categories and means of delineating the problem are presented in clear intelligible fashion. Methods described are directed to shaping adequate speech and language development.

Chapter VII, Psychological and Linguistic Implications of Brain Damage in Children by Martin J. Berko is a good review of the behaviorally descriptive aspects of the generalized brain damage syndrome. This chapter is especially recommended for teachers and psychologists who test children. For the child psychiatrist it provides a good review of the syndrome and it will be of help in correlating the clinical picture, the results of the psychological test, and neurological findings with his own observations.

The last chapter is devoted to special education for the cerebral palsied in which detailed examples are given.

Against the background of many books and articles on this subject, often espousing one particular view, this work is a welcome eclectic appraisal, approach, and guide to understanding and helping these handicapped children.

Robert G. Carlson, M.D.

Airplane Safety is a Myth, by Capt. Vernon W. Lowell. Bartholomew House, $5.95.

This book had to be written, and this reviewer is everlastingly grateful to this courageous airline pilot for doing it. He pulls no punches. Defects which were the cause of the Denver crash in 1961, and other fire-control defects which were the cause of the deaths in that crash, had not been corrected by November, 1964, and were the cause of the author's crash and the 50 deaths in that crash, and had not been corrected over two years later at the time of his writing.

This book proves what this reviewer has known for over ten years, the Civil Aeronautics Board and the Federal Aviation Agency are more amenable to the airline industry and the aircraft industry than they are to facts. He presents case after case where the crash is blamed on pilot error when the facts to an impartial jury would indicate otherwise. And his solution? He writes, "How then can we arrive at the true probable cause? By *true adversary proceedings.* (Italics his.) We need the nature of a courtroom, with two sides arguing the facts—a complete public airing . . . These adversary proceedings can be conducted before a tribunal of judges, or a jury."

In the Salt Lake City Boeing 727 crash of November 11, 1965, ten witnesses observed fire *prior* to impact. Writes Denver pilot Gale C. Kehmeier, the sole survivor pilot of four successive 727 crashes, "At the Public Hearing I requested that three of these witnesses be allowed to testify. My request was denied." Who denied this request? The CAB, of course. Here was a tremendous opportunity to get some factual information that might clarify the three other Boeing 727 crashes of which there were no survivors.

As the author suggests, and as this reviewer insists, the CAB and the FAA must be on trial at the Public Hearings precisely as much as is the pilot and the airline. The failure of these regulatory bodies to correct proved defects and to require modern technics is responsible for more deaths and injuries than anything else.

It is the duty of the Congress to pass this needed legislation, and the duty of each individual to inform himself and to make the strongest recommendations to his representative in the Congress.

Horace E. Campbell, M.D.

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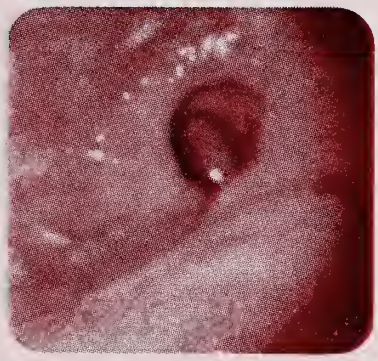

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For positive, selective anticholinergic benefits Pro-Banthine is indicated in patients with peptic ulcer, gastritis, irritable colon and other forms of gastrointestinal hypermotility.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthine (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Contraindications: In glaucoma or severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in the elderly male with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug.

Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

1. Barowsky, H.; Greene, L.; Bennett, R., and Buganza, G.: The Effect of Anticholinergic Drugs on Gastric Motility and Pyloric Function, Scientific Exhibit, Annual Convention of the American Medical Association, Chicago, Illinois, June 26-30, 1966.

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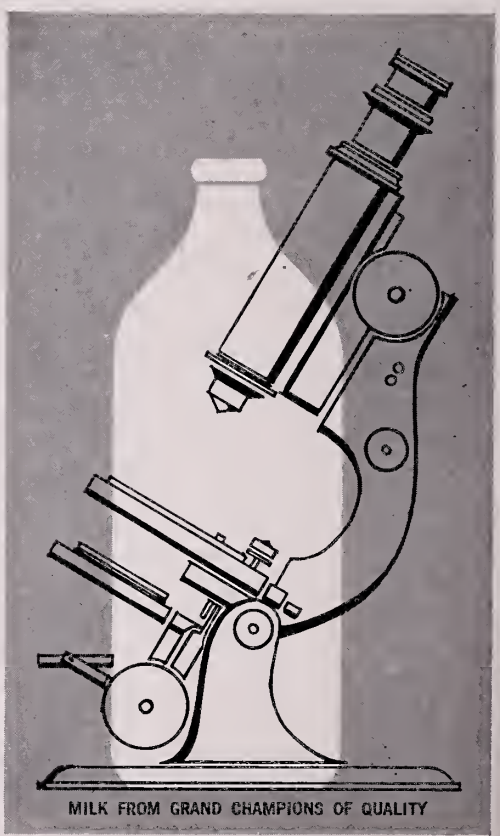

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SOCIETY OFFICERS

Colorado Medical Society

OFFICERS 1966-67—Terms of Officers and Committeemen expire at the Annual Session of the year indicated. Where no year is indicated the term is for one year and expires Sept. 23, 1967, at the Annual Session in Colorado Springs.
President: Myron C. Waddell, Denver.
President-elect: Henry H. Zeigel, Collbran.
Vice President: Eugene B. Ley, Pueblo.
Treasurer: William A. Day, Colorado Springs, 1968.
Constitutional Secretary: Marvin E. Johnson, Denver, 1969.
Additional Trustees: Carl H. McLauthlin, Denver, 1967; Kenneth A. Platt, Westminster, 1967; William A. H. Rettberg, Denver, 1968; Robert W. Ludwick, Sterling, 1969.
Delegates to the American Medical Association: Harlan E. McClure, Lamar, Dec. 31, 1967 (Alternate, Vernon L. Bolton, Colorado Springs, Dec. 31, 1967); Gatewood C. Milligan, Englewood, Dec. 31, 1967 (Alternate, Ray G. Witham, Craig, Dec. 31, 1967); Kenneth C. Sawyer, Denver, Dec. 31, 1968 (Alternate, Robert E. McCurdy, Denver, Dec. 31, 1968).
Speaker, House of Delegates: Matthew L. Gibson, Aurora.
Vice Speaker, House of Delegates: John M. Wood, Englewood.
Foundation Advocate: W. Bernard Yegge, Denver
Historian: Hermann B. Stein, Denver.
Historian Emeritus: Bradford Murphey, Denver.
Scientific Editor for Colorado and Chairman of the Editorial Board, Rocky Mountain Medical Journal: Douglas W. Macomber, Denver.
Assistant Scientific Editor for Colorado, Rocky Mountain Medical Journal: Carl H. McLauthlin, Denver.
Executive Secretary: Donald G. Derry, 1809 E. 18th Ave., Denver. Office Telephone 399-1222.

Montana Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.
President: Albert L. Vadheim, Bozeman.
President-elect: Alfred M. Fulton, Billings
Vice President: Mark B. Listerud, Wolf Point.
Secretary-Treasurer: Oscar A. Swenson, Sidney
Assistant Secretary-Treasurer: Hugh V. Anderson, Great Falls
Delegate to the A.M.A.: Herbert T. Caraway, Billings
Alternate Delegate to the A.M.A.: Robert W. Thometz, Butte
Executive Committee: Albert L. Vadheim, Bozeman; Alfred M. Fulton, Billings; Mark B. Listerud, Wolf Point; Oscar A. Swenson, Sidney; Hugh V. Anderson, Great Falls; Robert W Thometz, Butte; Paul J. Gans, Lewistown; Robert K. West, Cut Bank.
Scientific Editor, Rocky Mountain Medical Journal: Warren D. Bowman, Jr., Billings
Associate Editor, Rocky Mountain Medical Journal: L. Russell Hegland, Billings
Executive Secretary: L. Russell Hegland, 1236 North 28th St. (P. O. Box 1692), Billings, 59103. Office Telephone 259-2585.

Nevada State Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.
President: William M. Tappan, Reno.
President-elect: Richard A. Petty, Carson City.
Secretary-Treasurer: V. A. Salvadorini, Reno.
Immediate Past President: Joseph M. George, Jr., Las Vegas.
Delegate to A.M.A.: Leslie A. Moren, Elko.
Alternate Delegate to A.M.A.: Thomas S. White, Boulder City.
Scientific Editor for Nevada, Rocky Mountain Medical Journal: Harry J. McKinnon, Las Vegas.
Assistant Scientific Editor for Nevada, Rocky Mountain Medical Journal: Wesley W. Hall, Reno.
Associate Editor, Rocky Mountain Medical Journal: Nelson B. Neff, Reno.
Executive Seeretary: Mr. Nelson B. Neff, 3660 Baker Lane, Reno. Telephone 323-6788.

New Mexico Medical Society

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.
President: Tom L. Carr, Albuquerque.
President-Elect: Emmit M. Jennings, Roswell.
Vice President: Earl B. Flanagan, Carlsbad.
Secretary-Treasurer: John D. Abrums, Albuquerque.
Immediate Past President: Robert P. Beaudette, Raton
Speaker, House of Delegates: Hugh B. Woodward, Albuquerque.
Vice Speaker, House of Delegates: Ronald V. Dorn, Albuquerque.
Delegate to A.M.A.: Allan L. Haynes, Clovis, January 1, 1965 to December 31, 1966.
Alternate Delegate to A.M.A.: James C. Sedgwick, Las Cruces.
Councilors for Three Years: Don R. Clark, Roswell; Alvin S. Hartz, Farmington; Samuel E. Neff, Clovis.
Councilors for Two Years: Harry D. Ellis, Santa Fe; Armin T. Keil, Raton.
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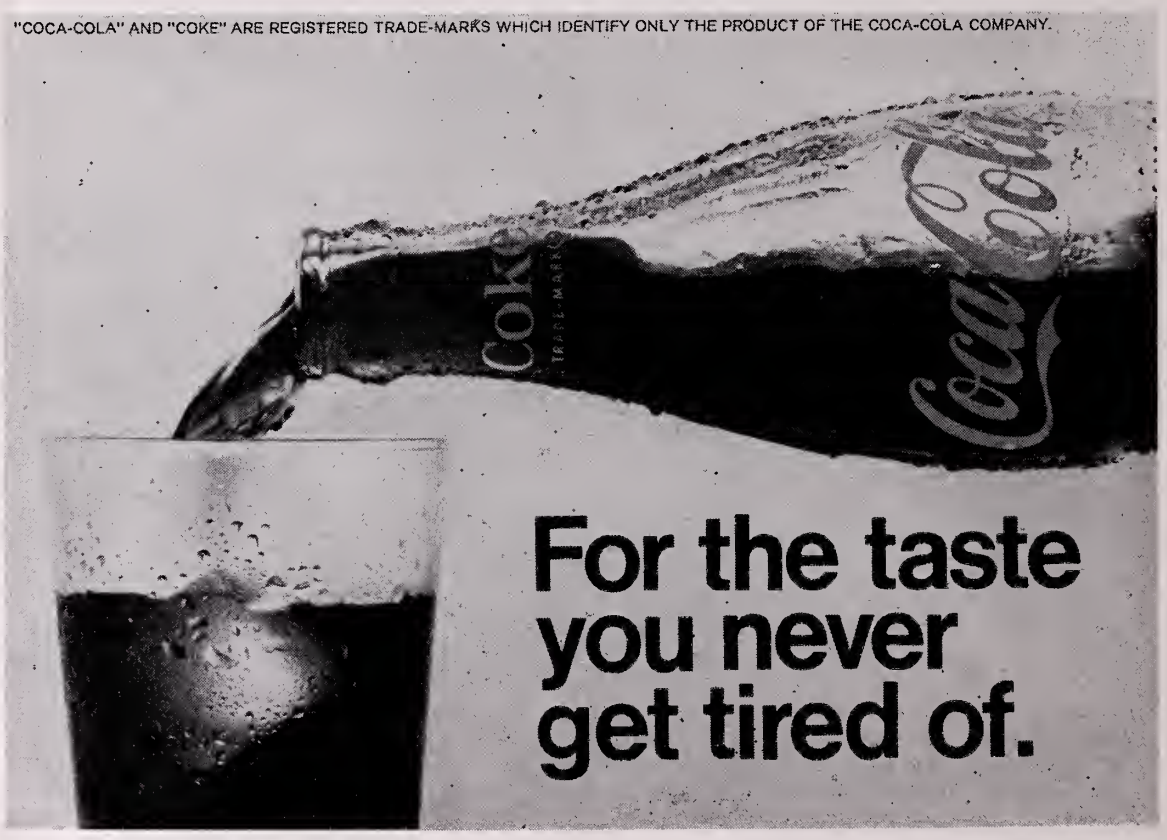

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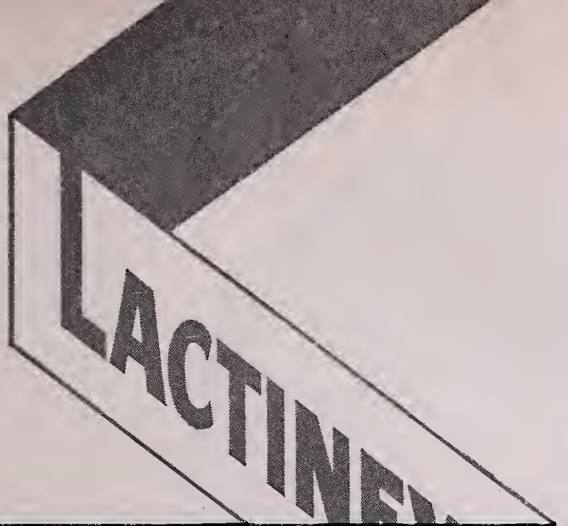

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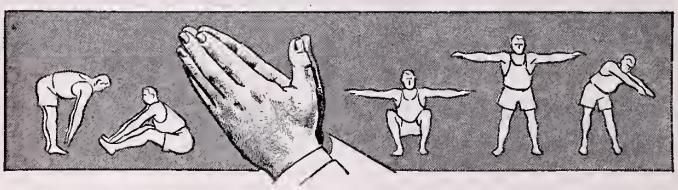

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DIET DROPOUTS ACCORDING TO DRS. SHIPMAN AND PLESSET "APPARENTLY NO DIETER SUCCEEDS WHO IS VERY ANXIOUS OR DEPRESSED."* THE AMBAR FORMULA PROVIDES **METHAMPHETAMINE** TO HELP **ELEVATE** THE **MOOD** AND **PHENOBARBITAL** TO HELP REDUCE **ANXIETY.**

*SOURCE: ARCHIVES OF GENERAL PSYCHIATRY 8:26 (JUNE 1963).

CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

AMBAR #2 EXTENTABS®

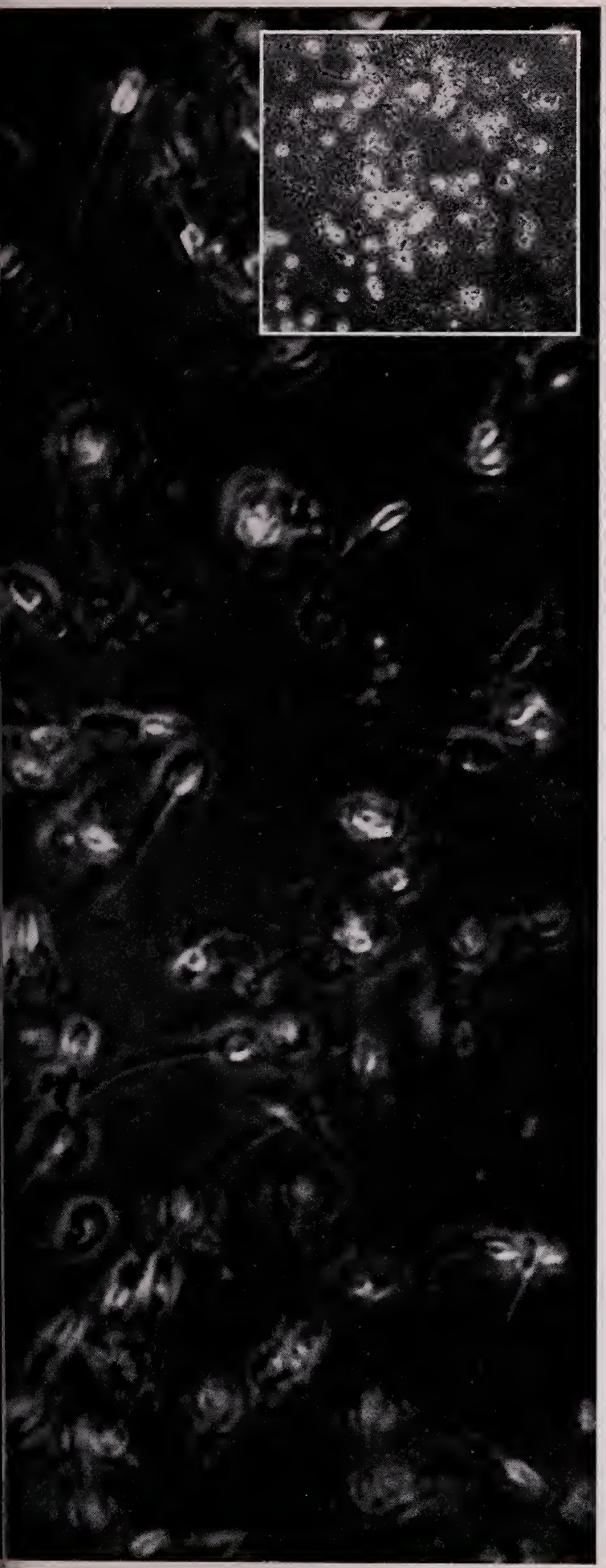
methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety... helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

A. H. ROBINS COMPANY, RICHMOND, VA. 23220 A·H·ROBINS



New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1— a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual mid-cycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

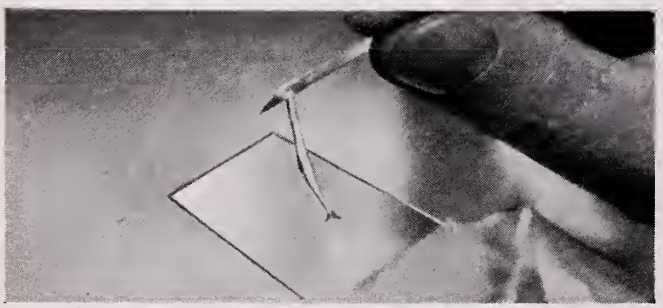
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

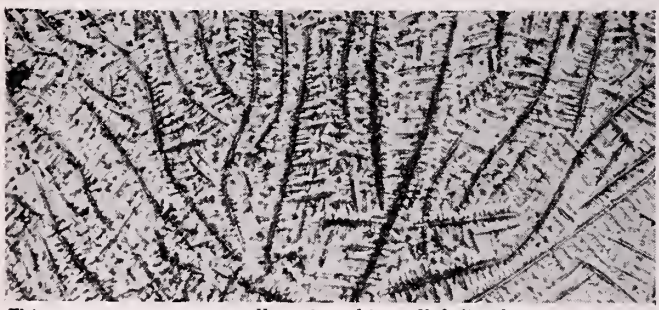
In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

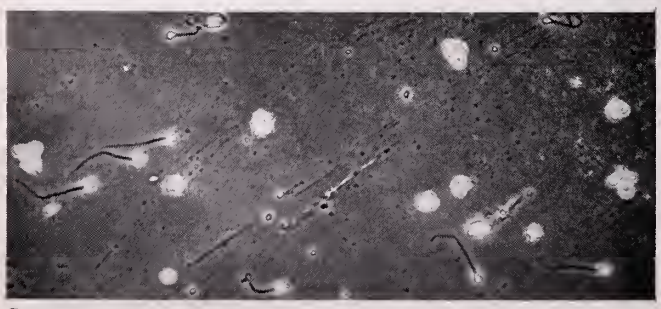
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



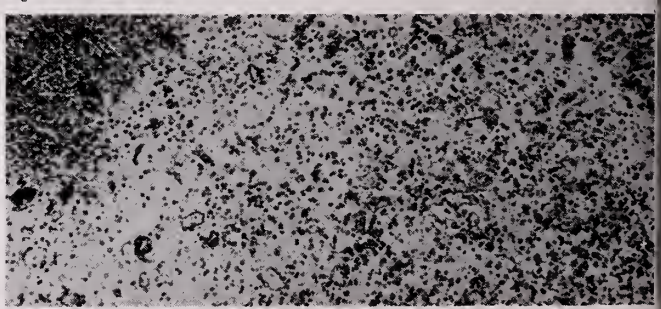
Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.



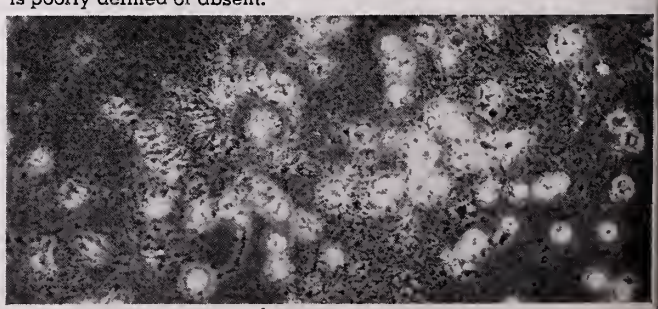
Spermatozoa appear healthy, are active and freemoving.

Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.

Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

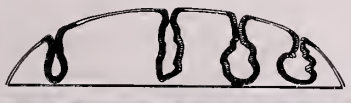


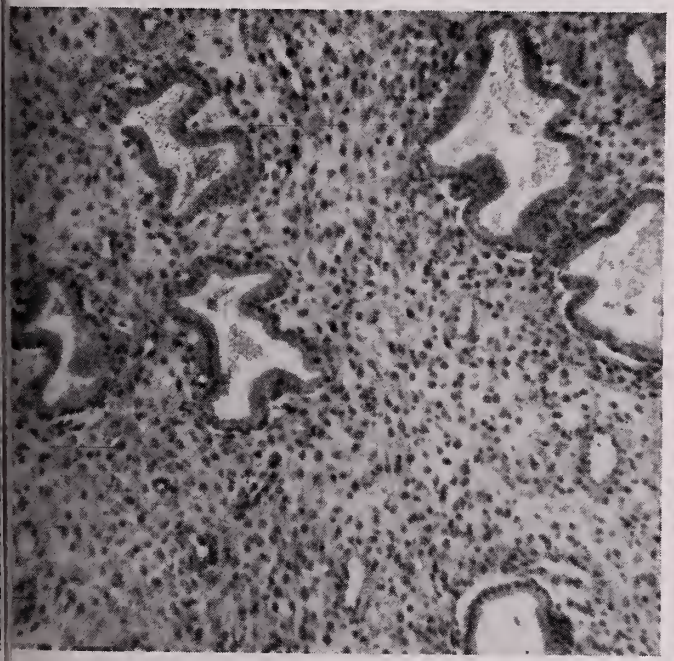
Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses—another possible protective mechanism

Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

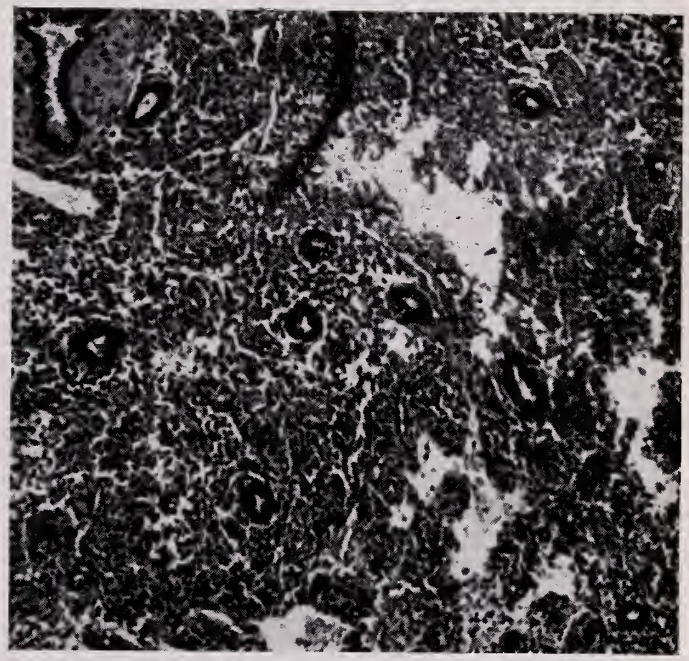
Endometrium of untreated patient





Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

See last page for contraindications, precautions, side effects and dosage.

new Norinyl-1® tablets

(norethindrone 1mg. & mestranol 0.05mg.)

effective fertility control
on half the previous dosage

maintains ratio
of the established
norethindrone/mestranol
combination

lower cost

new Norinyl®-1

(norethindrone 1mg. c̄ mestranol 0.05mg.) tablets

Reduction of oral contraceptive dosage to lowest effective levels ha become a well-accepted principle of conservative medical practic In keeping with this view, Norinyl is now available in a new strengt in which *both* norethindrone and mestranol are reduced 50 percer Studies show that Norinyl-1 achieves fertility control with only 1.0 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent i human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., a an oral contraceptive, is currently in use by over 2,000,000 wome Clinical experience now establishes that Norinyl-1 also amply meet the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: creased bromsulphalein retention and oth hepatic function tests, coagulation tests (crease in prothrombin, factors VII, VIII, IX ar X), thyroid function (increase in PBI and bu nol extractable protein-bound iodine and crease in T^3 values), metapyrone test, pregna diol determination.

Other side effects reported to have occurr in association with use of this drug are di ness, hirsutism, pains in legs, back, chest a abdomen, dysuria, drowsiness, vaginal d charge, libido increased and decreased, er tions, hypermenorrhea, hypomenorrh increased appetite, G.U. infections, varico veins, abdominal fullness, acne, headac nervousness, allergies, blurred vision, pain eyes, and itching in eyes. *For complete clinic data, see package insert.*

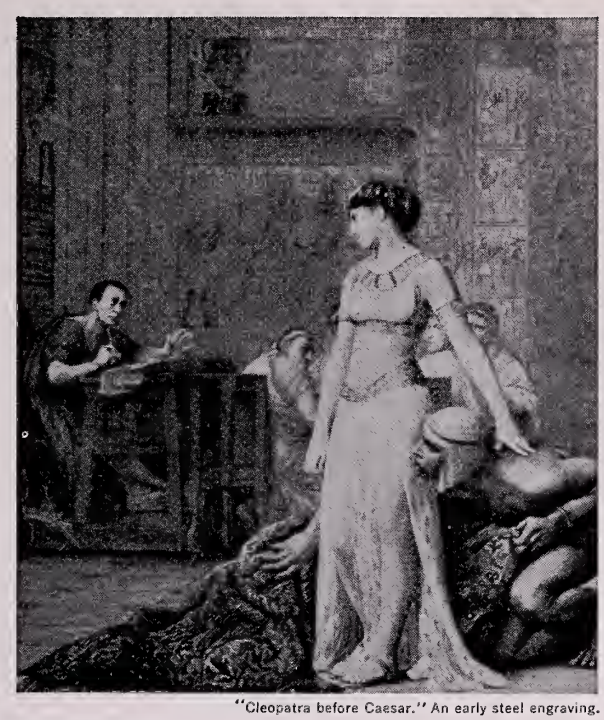
Dosage and Administration: 1. One tablet Norinyl-1 is administered orally for 20 da beginning on day 5 of the menstrual cyc (Count day 1 of the cycle as the first day menstrual bleeding.) Repeat this dosage sch ule for each cycle. 2. If no menstrual peri occurs after a cycle of treatment (20 tablets) which patient adhered to the schedule, the tient must be instructed to resume taking t Norinyl-1 tablets 7 days after the previous day course was completed. For example, if t last pill of a previous cycle had been taken a Sunday, then a new cycle of treatment shou begin on the following Sunday. 3. In the po partum woman, it is recommended that t first cycle of treatment should begin on day of the first menstrual cycle. However, Norinyl should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 r with mestranol 0.05 mg.)—Dispensers of 20 a 60 and bottles of 250 tablets.

norethindrone — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

Cleopatra knew what every doctor should know...



"Cleopatra before Caesar." An early steel engraving.

Cleopatra had a way with men and wine. With wine, she eased the jumpy tensions of Julius Caesar and Mark Antony. **Wine, mankind's first medicine, had been the supreme mild tranquilizer thousands of years before Cleopatra—and still is today.**

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The Winemakers of California

*Rx WINE: **4 ounces with lunch and dinner daily.** Wine stimulates gastric flow; can help the convalescing patient; can aid the patient lacking appetite; can help relieve anxiety; can help patients suffering from the malabsorption syndrome; helps hospital and geriatric home morale; helps to make meal-time pleasant and relaxing.

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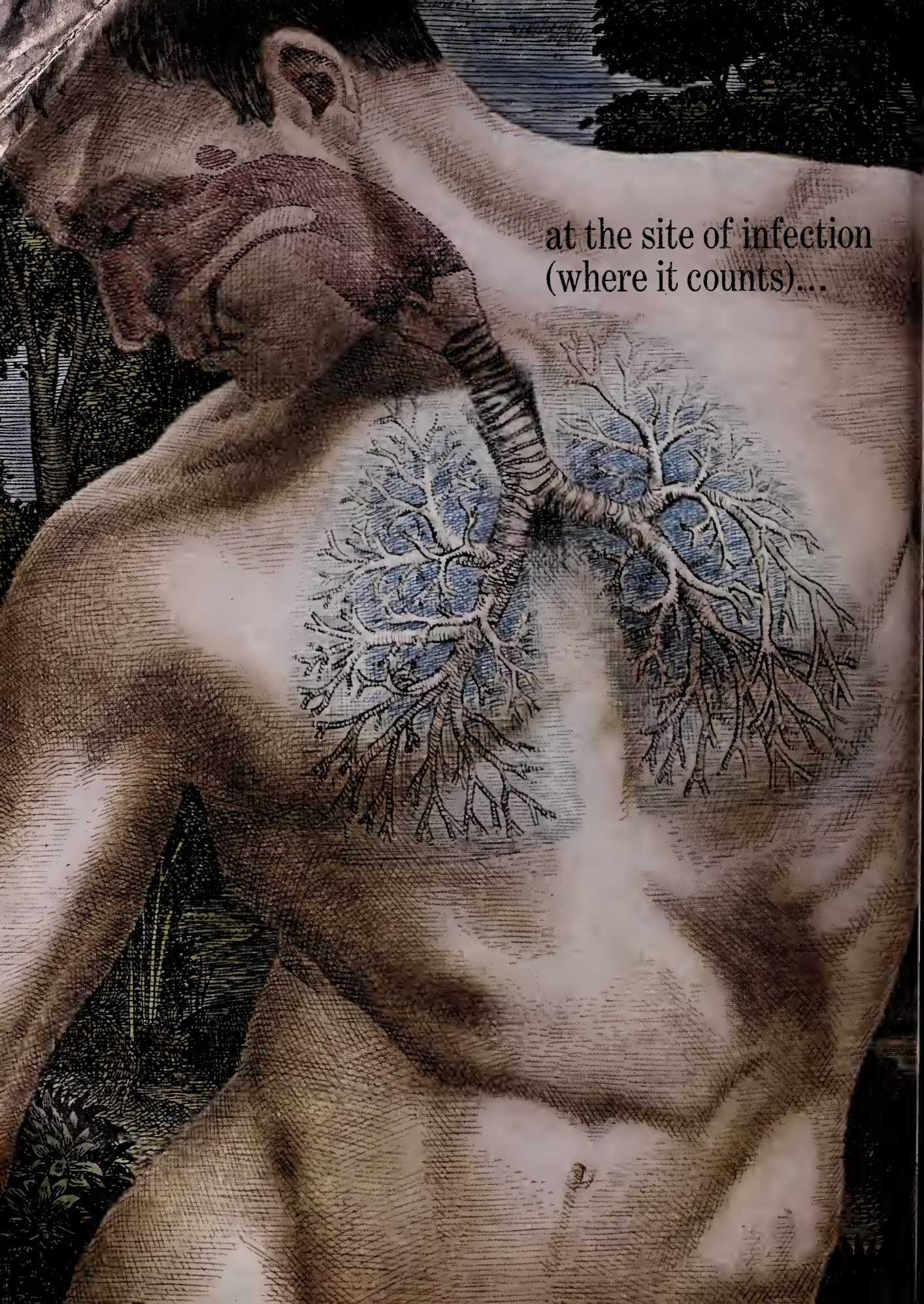

at the site of infection
(where it counts)....

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

700970

Ilosone®
Erythromycin Estolate

Lilly

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeare be definitely related to use of the drug, laboratory findings w characterized by increased direct-reacting bilirubin, eleva alkaline phosphatase levels, negative or weakly positive ceph flocculation and thymol turbidity tests, elevated serum gluta oxalacetic transaminase levels, peripheral eosinophilia, and r mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has been reported in other patients taking prolonged courses of medication. Patients with chronic infection have been given to 2 Gm. of the drug daily for periods of two to six months, patients with rheumatic fever have taken prophylactic dose 0.5 Gm. daily for two years without difficulty. In one grou 144 patients who received the drug daily for two years, no ja dice was noted. It was of interest that members of six of t patients' families, who were not taking the drug, had epis of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels v determined in a group of fifty-four adults and children who 250 mg. of Ilosone daily for an average of sixteen month rheumatic fever prophylaxis. The results were compared those of a similar group of forty-four patients who received icillin. There were no cases of jaundice in either group. Eleva of SGPT and serum alkaline phosphatase levels during the co of treatment was observed in one patient treated with Ilo and in two patients treated with penicillin. Seven other pati in the group receiving Ilosone and four others in the penic group showed elevations in one of the tests at some time du administration of the drugs.

Very satisfactory therapeutic results, without toxicity, reported in 102 pediatric patients who received short-term (day) courses of Ilosone in the treatment of streptococcus i tions. Results of liver function tests in these patients v comparable to those in a similar control group who had rece penicillin.

Gastro-intestinal disturbances not associated with hepati fects are observed in a small proportion of individuals as a r of a local stimulating effect of the medication on the alimen tract; however, the normal intestinal gram-negative bact flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the of erythromycin, there have been occasional reports of urtic skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of weight, the usual dosage is 5 mg. per pound every six hours children twenty-five to fifty pounds, 125 mg. every six h (Tablets Ilosone Chewable should be chewed or crushed swallowed with water.)

For adults and for children over fifty pounds, the usual do of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythron therapy should be considered.

In the treatment of syphilis, the recommended total dosa 20 to 30 Gm. given in divided doses for a period of ten to fi days. Close follow-up of the patient is necessary since ery mycin drugs have not had adequate evaluation in all stag syphilis. Examinations of spinal fluid are recommended as of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four day recommended. In the treatment of gonorrhea, patients w suspected lesion of syphilis should have a dark-field examin before receiving antibiotics, and monthly serologic tests s be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 25 (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equiv to base) per 5-cc. teaspoonful, in 60-cc. and pint-size pack

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equiv to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size pack

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc si packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to bse) in bottles of 50. [0376

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 196
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 196
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
Eli Lilly and Company, Indianapolis, Indiana 46206.

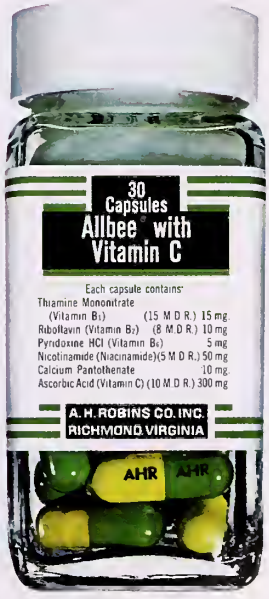
Lilly

Two ways to give your patients a month's therapeutic supply of vitamin C:

118 grapefruit or 30 Allbee® with C

Your patient would have to eat 118 medium-sized grapefruit (almost 4 a day!) to get as much vitamin C as is provided in just one bottle of 30 Allbee with C capsules (taken one capsule daily). In addition, each capsule supplies full therapeutic amounts of the B-complex vitamins.

Your patients can purchase Allbee with C capsules in the convenient bottle of thirty—a month's supply at a very reasonable price. Also the economy size of 100. Available at pharmacies everywhere on your prescription or recommendation.



A-H-ROBINS

A. H. Robins Company, Richmond, Virginia

the spasm reactors in your practice deserve

"the Donnatal® Effect"

	each tablet, capsule or 5 cc. of elixir (23% alcohol)	each Extentab®
hyoscyamine sulfate	0.1037 mg.	0.3111 mg.
atropine sulfate	0.0194 mg.	0.0582 mg.
hysocine hydrobromide	0.0065 mg.	0.0195 mg.
phenobarbital	(¼ gr.) 16.2 mg.	(¾ gr.) 48.6 mg.

(Warning: may be habit forming)

Brief summary. Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.

A. H. ROBINS COMPANY, RICHMOND, VIRGINIA 23220

A·H·ROBINS

In peptic ulcer... antacid therapy with a new benefit

CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart

Winthrop

announces

a breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent, injectable non-narcotic

For every physician who has ever prescribed morphine

Talwin is the new potent non-narcotic injectable analgesic which is indicated for relief of all types and degrees of pain in acute and chronic disorders. Talwin 30 mg. is usually as effective an analgesic as morphine 10 mg. or meperidine 75 to 100 mg., but needs no narcotics controls; its duration of action may sometimes be less than that of morphine.

Talwin is relatively free from adverse effects of morphine, such as constipation, urinary retention, or severe respiratory depression. It has been used, in varying dosages, in over 12,000 patients for relief of pain of medical disorders, of active labor and postoperative pain; also for preoperative or preanesthetic medication, and as an adjunct to anesthesia.

A brochure incorporating analyzed information on Talwin is available. The completeness of the information will permit you to evaluate the role Talwin can play in your practice.

You can depend on Talwin to relieve pain:

WHATEVER the intensity of the pain
the cause of the pain
the site* of the pain
the duration of the pain
the chronicity of the pain
the age† of the patient

Talwin does not require a narcotics prescription

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "... there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally." (*WHO Tech. Rep. Ser.*, No. 343, 1966, p. 6.)

It is our sincere belief that the discovery of Talwin by Winthrop Laboratories will be of great value to you and your patients for whom you may have to prescribe a potent analgesic.

*Talwin should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.
†Until sufficient experience is gained, it should not be administered to children under 12 years of age.

Talwin—brand of pentazocine (as lactate)

Contraindications: *Increased Intracranial Pressure, Head Injury, or Pathologic Brain Conditions in which clouding of sensorium is undesirable.* Talwin (brand of pentazocine) should not be administered in these cases, since drug-induced sedation, dizziness, nausea, or respiratory depression could be misleading.

Precautions: *Pregnancy.* No teratogenic or embryotoxic effects attributable to the use of Talwin have been seen in extensive reproductive studies in animals; however, like all new drugs, Talwin should be given with caution to pregnant women. A large number of patients in labor have received the drug with no adverse reactions other than those that occur with commonly used strong analgesics. However, as with other strong analgesics, Talwin should be used with caution in women delivering premature infants.

Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.

Certain Respiratory Conditions. The possibility that Talwin (brand of pentazocine) may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin (brand of pentazocine) should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.

Patients Dependent on Narcotics. Because Talwin is a narcotic-antagonist, patients dependent on narcotics and receiving Talwin may occasionally experience certain withdrawal symptoms. Talwin should be given with special caution to such patients. It has been observed that some patients previously given narcotic-analgesics for one month or longer had mild withdrawal symptoms when the drug was replaced with the analgesic, Talwin. After a short period of adjustment the subjects were usually able and willing to continue taking Talwin, and relief of pain was satisfactory.

Nonaddicted Patients Receiving Narcotics. Symptoms believed to be indicative of antagonism to the opiate may be observed rarely with administration of Talwin to patients receiving opiates for a short time. Intolerance or untoward reactions are seldom observed after administration of Talwin to patients who have received single doses or who have had limited exposure to narcotics.

Impaired Renal or Hepatic Function. Although laboratory tests have not indicated that Talwin (brand of pentazocine) causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.

Myocardial Infarction. As with all drugs, Talwin (brand of pentazocine) should be used with caution in patients with myocardial infarction who have nausea or vomiting.

Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.

Adverse Effects: Talwin is relatively free from the undesirable side effects associated with morphine, such as constipation, urinary retention, or severe respiratory depression. Furthermore, Talwin produces less nausea, vomiting, and diaphoresis than meperidine.

In over 12,000 patients who received Talwin intramuscularly, subcutaneously, or intravenously, nausea, the most frequent adverse effect, occurred in approximately 5.0 per cent. In decreasing order of occurrence were vertigo, dizziness or lightheadedness; vomiting; and euphoria. Respiratory depression was reported as an adverse reaction in 1.0 per cent.

The incidence of each of the other adverse effects was well below 1.0 per cent: constipation, circulatory depression, diaphoresis, urinary retention, alteration in mood (nervousness, apprehension, depression, floating feeling), hypertension, sting on injection, headache, dry mouth, flushed skin including plethora, altered uterine contractions during labor, dermatitis including pruritus, dreams, paresthesia, and dyspnea occurred rarely after administration of Talwin (brand of pentazocine). Furthermore, each of the following adverse reactions occurred in less than 0.1 per cent: tachycardia, visual disturbance (blurred vision, diplopia and nystagmus), hallucinations, disorientation, weakness or faintness, muscle tremor, chills, allergic reactions including edema of the face, taste alteration, insomnia, diarrhea, cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adults (never apnea), even with large amounts. A small number of newborn infants whose mothers received Talwin during labor had transient apnea. The incidence of temporary diminution in the rate or strength of uterine contractions is low after administration of Talwin, similar to that following meperidine hydrochloride. (In reporting no interference with normal labor in patients receiving Talwin, one investigator further stated that the drug may increase uterine activity.) Generally, no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have revealed no significant abnormalities. A minimum and probably insignificant increase in the per cent of eosinophils in peripheral blood counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and no changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Excluding Patients in Labor.* Average recommended single parenteral dose is 30 mg., by intramuscular, subcutaneous, or intravenous route; may be repeated every three to four hours. Pain has been relieved in most patients with not more than three doses daily. Infrequently, selected patients have received single doses as high as 60 mg. *Patients in Labor.* A single, intramuscular 30 mg. dose has been most commonly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin (brand of pentazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talwin for prolonged periods (e.g., over 300 days) experienced no withdrawal symptoms even when administration was stopped abruptly; furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has not produced apnea or severe respiratory embarrassment in adults, even in large doses. Occasionally, however, moderate respiratory depression may occur. Means of maintaining oroper oxygenation should be available in case of overdosage or respiratory depression, and methylphenidate (Ritalin®) should be administered parenterally. The usual narcotic-antagonists, such as nalorphine, are not effective respiratory stimulants for depression due to Talwin.

How Supplied: *Ampuls of 1 ml.*, containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base and 2.8 mg. sodium chloride, in Water for Injection. **Boxes of 10, 25, and 100.**

***Multiple dose vials of 10 ml.*, each 1 ml. containing Talwin (pentazocine) as lactate equivalent to 30 mg. base,** 2 mg. acetone sodium bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as preservative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide.

Winthrop

Winthrop Laboratories, New York, N.Y. 10016

when bursitis hits a 280-lb. tackle, hit back with Butazolidin alka

Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ul-

For 280-lb. tackles—or 108-lb. housewives—Butazolidin alka can hasten recovery from the agonizing pain of shoulder bursitis.

It's not for every patient. Check carefully the Contraindications, Warning and Precautions shown below.

And adverse reactions may occur. The most common are nausea, edema and rash. Rarely, agranulocytosis has been reported. All adverse reactions are listed below, too.

Play-for-pay or workaday patients—when they come up with shoulder bursitis and your clinical judgment indicates Butazolidin alka—go with it.

And watch the comeback.

cer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur. 6509-V(B)R2

Butazolidin® alka

Capsules

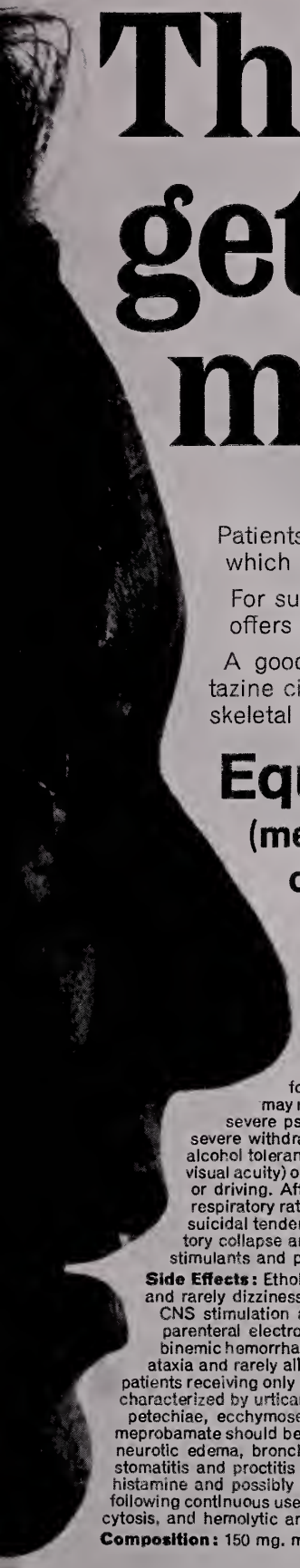
100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide

Dosage in painful shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

For complete details, please see full prescribing information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, New York

Geigy



This pain is getting on my nerves.

Patients in pain often experience concomitant anxiety and tension, which may add to the burden of pain.

For such patients, you may want to prescribe a preparation that offers more than simple analgesia.

A good choice is often EQUAGESIC® (meprobamate and ethoheptazine citrate with aspirin). It helps relieve pain. And anxiety. And skeletal muscle spasm as related to pain or anxiety and tension.

Equagesic® TABLETS

(meprobamate and ethoheptazine citrate with aspirin)

Wyeth®

Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Warnings: USE IN PREGNANCY: Safety for use during pregnancy or lactation has not been established; therefore it should be used in pregnant patients or women of child-bearing age only when the physician judges its use essential to the patient's welfare.

Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with immediate gastric lavage and appropriate supportive therapy (CNS stimulants and pressor amines as indicated).

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness. Overdosage may result in CNS depression (drowsiness and lightheadedness) or CNS stimulation and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]). Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically such as with epinephrine, antihistamine and possibly hydrocortisone. A few cases of leucopenia, usually transient, have been reported following continuous use. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

Against these three major pathogens…

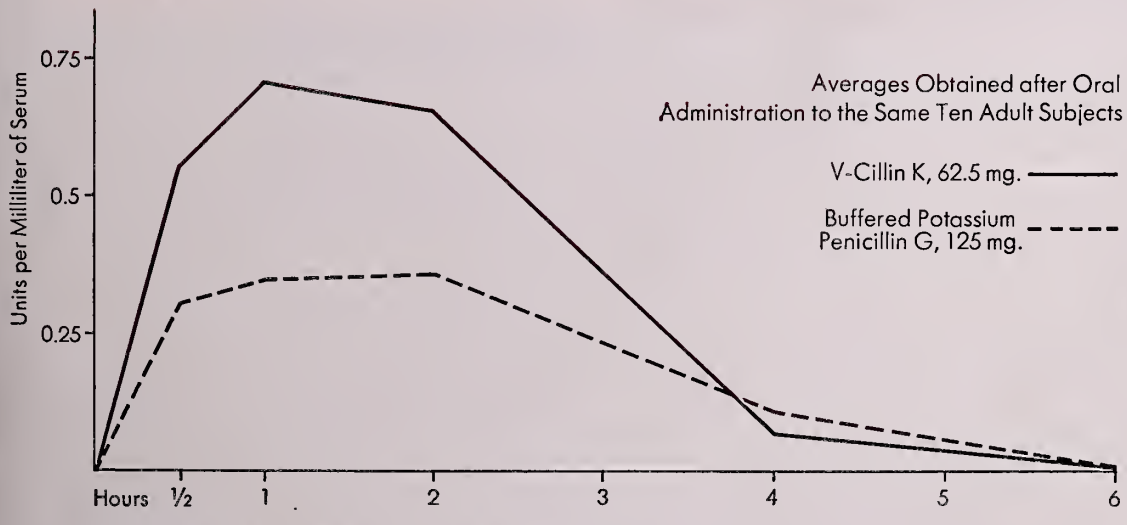
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med.,269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6:253, 1964.

V-Cillin K® Lilly 700867

Potassium Phenoxymethyl Penicillin

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses

Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalotion) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with parenteral dosage schedules, frequent evaluation of the renal hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory stu (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowt pencillin-insensitive organisms. In such cases, its administration sh be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much common with administration of oral penicillin than with intramusc forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a sig cant index of sensitization. The following hypersensitivity react associated with the use of penicillin have been reported: skin ra ranging from maculopapular eruptions to exfoliative dermatitis; caria; and reactions resembling serum sickness, including chills, f edema, arthralgia, and prostration. Severe and often fatal anaphy has occurred (see Warnings). Hemolytic anemia, leukopenia, th bocytopenia, and nephropathy are rarely observed side-effects are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cil Pediatric, the usual dosage ranges from 125 mg. (200,000 units) t times a day to 500 mg. (800,000 units) every four hours. For inf the daily dosage may be 50 mg. per Kg. of body weight divided three doses.

Beta-hemolytic streptococcus infections without associated teremia may be treated with 200,000 to 400,0000 units three tim day. Therapy should be continued for a minimum of ten days to pre development of rheumatic fever and/or other serious complicat Dosage for routine streptococcus prophylaxis in patients with a hi of rheumatic fever or congenital heart disease may be 200,000 once or twice daily. When such patients undergo tonsillectomy, t extraction, or other minor surgery, the prophylactic dose shoul 500,000 units every six hours given two days prior to surgery an two days postoperatively. If oral medication is not feasible on the of surgery, parenteral therapy should be considered. Mild to m ately severe pneumococcus pneumonia has been treated effec with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be every six to eight hours in conjunction with indicated surgical p dures.

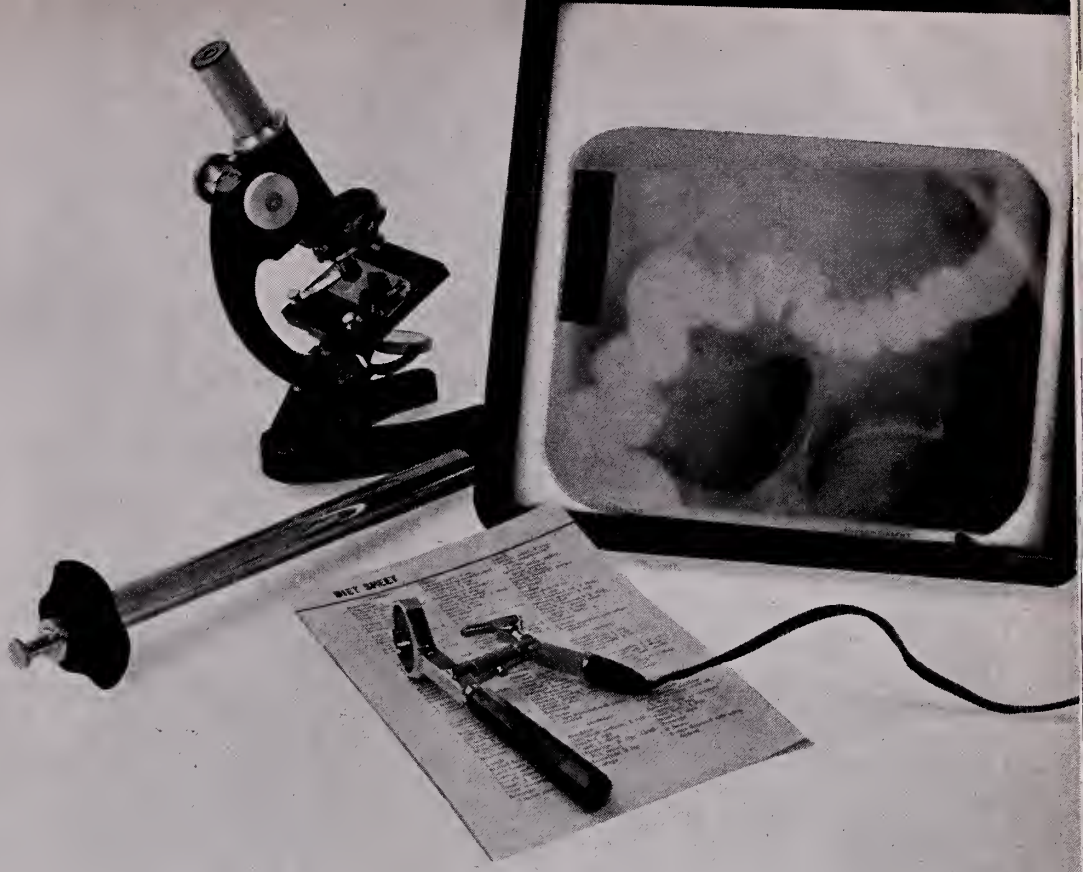
For gonorrhea in males, 500 mg. (800,000 units) every four hou three doses may be employed; in females, 500 mg. every four h for six doses are recommended. Refractory infections generally res to a second treatment three to four days following completion o first. Treatment of gonorrhea with severe complications shoul individualized, with prolonged and intensive treatment. Patients w suspected lesion of syphilis should have a dark-field examinatio fore receiving penicillin and monthly serologic tests for a minim three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [05

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lil



in digestive disorders:

B and C vitamins aid therapy. Nausea, vomiting, and severe diarrhea may seriously interfere with the digestion and absorption of nutrients. STRESSCAPS capsules, containing therapeutic quantities of vitamins B and C, may help meet the needs of these patients. In digestive disorders, as in many stress conditions, STRESSCAPS vitamins aid therapy.

Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

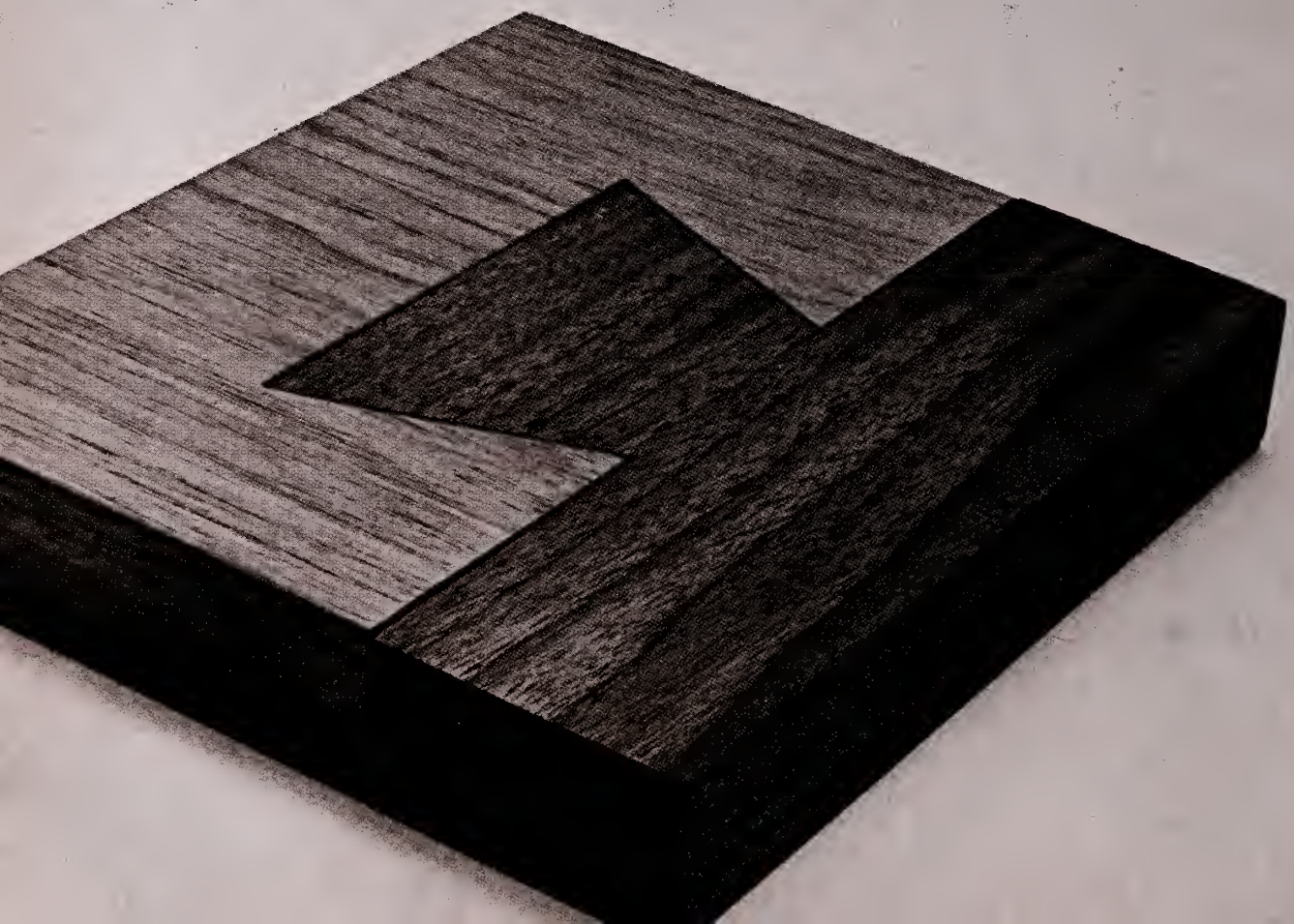
692—6—3943

Lederle

even better together
in mild hypertension

Serpasil®-Esidrix®

(reserpine and hydrochlorothiazide CIBA)
Combination Tablets



Serpasil-Esidrix combines reserpine (the original, and most widely used, rauwolfia alkaloid developed by CIBA) with hydrochlorothiazide (the most widely used oral diuretic, also a product of CIBA research).

even better blood pressure reduction—because 2 antihypertensive agents of choice often work better together

One drug potentiates the antihypertensive action of the other. Blood pressure is generally controlled with relatively low dosages of each component, often resulting in minimized side effects.

Although each component alone may provide adequate therapy in many cases of mild hypertension, the combination offers advantages which cannot be achieved with single-drug therapy.

even more patient benefits—because complementary actions of 2 antihypertensive agents extend the range of advantages

Reserpine, in addition to lowering blood pressure, provides central calming action to help relieve anxiety and tension; provides bradycrotic action to slow the rapid heart.

Hydrochlorothiazide, in addition to lowering blood pressure, relieves edema; permits relaxation of salt restriction.

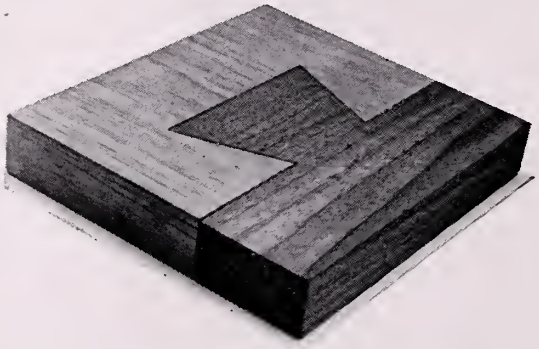
The combination provides medication in one tablet instead of two; one prescription instead of two—encourages patient adherence to the regimen, offers economy.

for your next patient with mild hypertension

Rx Serpasil-Esidrix Combination Tablets

Please see following page for prescribing information.

Serpasil®-Esidrix®
(reserpine and hydrochlorothiazide CIBA)
Combination Tablets



INDICATIONS: Mild to moderate hypertension, especially when complicated by anxiety, tachycardia, or edema.

SIDE EFFECTS AND PRECAUTIONARY MEASURES

Serpasil® (reserpine CIBA)
Occasional side effects: lassitude, drowsiness, nasal congestion, looseness of stools, increased frequency of defecation. Rare side effects: anorexia, headache, bizarre dreams, nausea, dizziness, skin rash.

Severe mental depression has appeared in a small percentage of patients, primarily in a dosage above 1 mg daily. When the drug is discontinued, depression usually disappears, but hospitalization and shock therapy are sometimes required.

Caution: Withdraw reserpine 2 weeks before surgery, if possible. For emergency surgical procedures, give vagal blocking agents parenterally to prevent or reverse hypotension and/or bradycardia.

Because reserpine may increase gastric secretion of hydrochloric acid, use cautiously in patients with peptic ulcer.

Use cautiously with digitalis, quinidine, or guanethidine. Not recommended for aortic insufficiency.

Esidrix® (hydrochlorothiazide CIBA)
Contraindictions: Oliguria, renal shutdown, progressive hepatic disease, and allergy to thiazides.

Warnings: Stenosis, hemorrhage, and ulceration of the small bowel have occurred with coated potassium tablets. Discontinue such medication when used with Esidrix if gastrointestinal disturbances arise.

Pay special attention to electrolyte balance of patients with severe renal or hepatic insufficiency. In patients with cirrhosis and ascites, watch for symptoms of impending hepatic coma. Thiazides may decrease glucose tolerance; use cautiously in diabetics. Hyperuricemia may occur but is readily reversed by a uricosuric agent. Lowering of blood pressure may sometimes result in nitrogen retention, particularly in patients with impaired renal function. Dosage titration is necessary in such patients.

Precautions: Watch for signs of fluid or electrolyte imbalance. Further electrolyte depletion may cause hypochloremic alkalosis and hypokalemia. Since the latter may precipitate digitalis intoxication, watch carefully patients who are taking digitalis or its glycosides or those with cardiac arrhythmias. In severe hypokalemia, large oral or intravenous doses of potassium may be required.

A few infants born of mothers who received thiazides during pregnancy have shown bone marrow depression with thrombocytopenia. Hydrochlorothiazide decreases responsiveness to exogenous norepinephrine and increases responsiveness to tubocurarine. Hypotensive episodes under anesthesia have been observed in some patients receiving thiazides.

Side Effects: In addition to those above, nausea, anorexia, headache, restlessness, constipation, dizziness, paresthesias, fatigue, increased sweating, cramps in arms and legs, diarrhea, abdominal pain. Rare reactions: purpura with or without thrombocytopenia, skin rash, photosensitivity, urticaria. Sometimes associated with hydrochlorothiazide: leukopenia, agranulocytosis, aplastic anemia, pancreatitis, jaundice, necrotizing vasculitis.

DOSAGE
Average dosage is 2 *Tablets #2* daily. For patients requiring less hydrochlorothiazide, substitute *Tablets #1*. For maintenance, reduce dosage to lowest effective level. When necessary, more potent antihypertensive agents may be added gradually in reduced dosages.

SUPPLIED
Tablets #2 (light orange), each containing 0.1 mg reserpine and 50 mg hydrochlorothiazide; bottles of 100 and 1000. *Tablets #1* (light orange), each containing 0.1 mg reserpine and 25 mg hydrochlorothiazide; bottles of 100 and 1000.

Consult complete literature before prescribing.

CIBA Pharmaceutical Company, Summit, N. J. C I B A

2/3595

Don't let monilia cut broad-spectrum therapy short...

start with Tetrex-F®

tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

University of Colorado Medical Center

An unrestricted gift of $5,000 to the Child Research Council at the University of Colorado Medical Center from the Gerber Products Co. of Fremont, Mich., has been announced by Dr. Robert W. McCammon, council director. Dr. McCammon said the Gerber company has supported the long-range research of the council with annual gifts of $5,000 since 1957 and the new grant brings the firm's total contribution to $55,000.

The new gift comes at a time when the future of the council is imperiled by a lack of funds to support its unique, 30-year investigation of the development of normal, healthy children and adults, Dr. McCammon said.

Additional financial support is needed to keep the long-term project alive and permit additional analyses of its huge accumulations of invaluable data. The information in the council's files already has resulted in 173 research reports published in professional journals.

* * * *

Dr. Robert G. Frazier has been appointed executive director of the Academy of Pediatrics. Dr. Frazier has been secretary of the academy since 1960 and will take his new position during the annual meeting of the organization in Washington, D. C., Oct. 21-26. He was a fellow at the CU Medical Center in 1950-52.

University of Utah Medical Center

Dr. Carter M. Ballinger, Chairman of the Division of Anesthesiology, announced recently the receipt of two grants from the National Institutes of Health for "Training in Clinical Anesthesiology and Intensive Care."

Dr. Ballinger said the first grant will provide stipends for either beginning fellows in anesthesiology or advanced fellows who wish particular training in some aspect of the specialty. Stipends will vary from $6,500 to $12,000 per year plus dependent's allowances.

The second grant for "Research Training in Anesthesiology" will provide funds for a fellow to receive training in one of the basic sciences related to the field.

Physicians interested in further information concerning this training should contact Dr. Carter M. Ballinger, University of Utah College of Medicine.

* * * *

It was announced recently that Dr. Alexander M. Schmidt, Assistant Dean of the University of Utah College of Medicine, has taken an extended leave of absence from the University to accept a position in Washington with the National Institutes of Health. Dr. Schmidt will become Chief of the Continuing Education and Training Branch of the Division of the Regional Medical Programs of the N.I.H. He will help coordinate educational systems to be tested and implemented by various Regional Medical Programs and also development of manpower to assist in medical education and continuing education. He will act as liaison with such professional health care oranizations as the American Medical Association, the American Hospital Association and the Association of American Medical Colleges.

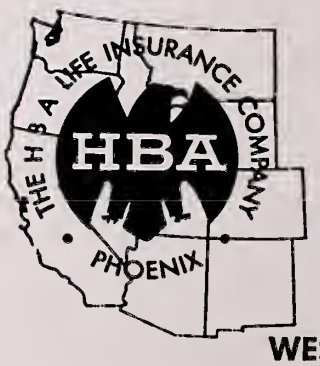
Other assignments will include active involvement in coordinating efforts of the Public Health Service toward improving educational and training efforts in health care and in patient care.

* * * *

Thousands of people with kidney failure have been unable to take advantage of artificial kidney treatment. The hospital units are expensive, numerous areas are without the equipment and hospital treatment is too costly for many. Now, according to Dr. Willem J. Kolff, dialysis can become a "family affair" at a "cost most families can afford."

Dr. Kolff was appointed as a professor of Surgery at the University of Utah College of Medicine in June, 1967. The University announced recently the receipt of approximately $200,000 from the U. S. Public Health Service Bureau of Disease Prevention, for the first year operation of a "Home Dialysis Training Center." The project involves the development of a coordinated program for the treatment of patients with terminal renal failure, under Dr. Kolff's direction.

Home dialysis is not new to Dr. Kolff and his staff. While in Cleveland, Ohio, just prior to his assignment at Utah, several "washing machines" were put into use in patient care. Dr. Kolff, himself, was the first to develop a clinically useful artificial kidney back in 1943.



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WESTERN STATES

A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .

Consider starting your hypertensives on this basic thiazide

ABBOTT

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

ABBOTT

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!

Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

707075-R

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. *Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.*
2. *Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.*

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

ABBOTT

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions*. Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

TM—Trademark

707075-R

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL® | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-Trademark.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Untii further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅕ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

709075R

ABBOTT

A medical potpourri

1. "Great teachers will come from all areas of the profession. All will have to face one problem: namely, that it is impossible to remain the best in any area of medicine for very long. The world does belong to the young, and my chief resident is tough competition for any professor, part-time or full-time." Stead, E. A., Jr., M.D., "Preparation for Practice," *The Pharos,* July: 70, 1966.

2. "Defining the therapeutic range of digitalis dosage as the gap between the lowest dose that will produce adequate therapeutic effect and the maximum dose tolerated without excessive toxicity, it must be admitted that as the patient's heart disease progresses the therapeutic range becomes smaller until the gap between the therapeutic and toxic dosage is eliminated." Beckman, H., M.D., *Dilemmas in Drug Therapy,* W. B. Saunders Company, 1967 p. 84.

3. "Finally, to complete the record, one last type of agent deserves mention—the osmotic diuretic. The practice has grown of giving mannitol to patients with 'impending renal failure.' Partly because this state is very difficult to define and partly because the rationale for the treatment has not been fully established, the value of this agent in preventing or reversing renal lesions is in doubt. Nevertheless, mannitol produces a flow of urine, which reassures the physician that the patient's kidneys are still working. This has the salutary effect of keeping the doctor from taking more drastic steps. The physician gets peace of mind—and the patient gets peace." Berliner, R. W., *Hospital Practice,* 2:76, 1967.

4. "It would seem clear that the association of gout and diabetes mellitus is not uncommon. Whether it is fortuitous or not, it might be advisable to add blood-sugar estimations to the routine investigations of a patient with gout." Leading Articles, *British Medical Journal,* 26 November 1966, p. 1281.

5. " . . . The ballast of factual information, so far from being just about to sink us, is growing daily less. The factual burden of a science varies inversely with its degree of maturity. As a science advances, particular facts are comprehended within, and therefore in a sense annihilated by, general statements of steadily increasing explanatory power and compass—whereupon the facts need no longer be known explicitly, i.e., spelled out and kept in mind. In all sciences we are being progressively relieved of the burden of singular instances, the tyranny of the particular. We need no longer record the fall of every apple."—Medawar, Sir Peter, the Art of the Soluble, p. 114. London, 1967: Quoted from *The Lancet,* Vol. 1, No. 7484, 1967, p. 243.

6. ". . . Of late years, whenever I find I am not getting anywhere with a patient, and there seems to be a barrier of mutual antipathy between us, I take myself by the scruff of the neck and force myself to make an unnecessary and lengthy physical examination. And invariably it has brought about this, shall we say, spiritual rapport. Invariably our relationship has been changed, and changed for the better. And it has certainly paid off better than keeping the patient at arm's length and sniping at him from behind the invisible barrier that lay between us, which had been my evasive action when I was younger and more insecure. But of course psychiatrists cannot do this. They want all the physical examination to be concluded before they see the patient. The real mountain-top Freudians do not even shake hands with the patient or help her on with her raincoat—a proper no-touch technique."—Dr. George Day, F. Coll. Gen. Practnrs., January, 1967, Suppl. 1, p. 25.: Quoted from *The Lancet,* Vol. 7486, 1967, p. 360.

7. "There is almost no evidence to support the contention that technology has reduced man's

ethical standards toward his fellow man. Throughout history, people have been exploiting, stabbing, dismembering, burning, or slaughtering other people; technology has changed only the means, not the principle. Nor is there evidence to prove that technology has reduced man's appreciation of nature and of human artifact. Encountering the pristine, the beautiful, or the historic, people have always polluted, pillaged, sacked, or destroyed; technology has changed the means, not the principle." Feinstein, Alvan R., M.D., "Compassion, Computers, and the Regulation of Clinical Technology," *Annals of Internal Medicine*—Vol. 66, No. 4—April, 1967, p. 790.

8. "Many young clinicians have lost (or never acquired) large parts of old clinical skills for interpreting bedside observations. The new clinicians have correctly recognized many situations in which clinical examination need be only brief and incomplete for the appropriate diagnostic tests to be selected. In such situations, the clinical data are not used as precise evidence in the *diagnostic* reasoning and serve mainly as clues to ordering the appropriate adjunctive tests that provide precise evidence. Extrapolating from these situations, many clinicians have changed their methods of diagnostic reasoning. The reasoning has become not a systematic exercise in deductive logic but a rapid reflex arc that begins with a few perfunctory observations at the bedside and ends with a profound list of entries in the nurse's order book. The brief clinical observation of "chest pain," not further specified, often evokes the reflex of a written order for diagnostic tests that may include "ECG, Sputum, Pap Smear, Sputum Cultures, 4-Posn. Chest X-ray $\bar{c}$ Barium, Transaminase, Lactic Dehydrogenase, etc." The brief clinical observation of "palpable liver," also not further specified, may evoke the order-book reflex of "LFTs $\bar{c}$ BSP, Pro Time, Bleed Time, Clot Time, Serum Electrophoresis, TP $\bar{c}$ A/G, Liver Scan, Liver Consult for Biopsy, etc." *Ibid.*, p. 192.

9. "There is nothing wrong with ordering all these tests—in the situations for which they are appropriate. But the clinician's obsession with diagnostic technology may make him lose the scientific intellectual skills that tell him when the situation is appropriate."*Ibid.*, p. 793.

10. "More significantly, however, after recognizing that technologic evidence is better than clinical evidence for certain pathologic diagnoses, the clinician may begin to think that clinical data have no importance at all. Having begun to abandon his skill in clinical examination because he often did not need that skill for pathologic diagnosis, he may no longer have the skill or he may no longer recognize its pertinence when he needs it for diagnoses that cannot be made technologically and for his reasoning in the crucial design and appraisal of the types of experiments that constitute ordinary therapy." *Ibid.*, p. 793.

11. "The most frightening aspect of the current clinical activities with computers, however, is that neither the "engineer" nor the clinician may be able to discern when the activities are done badly. The computer scientist, although well aware of the maxim that "a computer cannot convert garbage into fruit salad," may not have the clinical judgment to know when he begins with garbage. The clinician, on the other hand, may not be able to distinguish the different fruits or may be so awed by the gilded container in which the processed garbage appears that he neglects to scrutinize the contents." *Ibid.*, p. 801.

12. "At present, therefore, there are very few research clinicians who bring the wisdom of clinical judgment and an awareness of problems in clinical criteria, classification, and data to the "engineering" activities. The programs are being written frenziedly, the computers are running constantly, the pile of "print-outs" is mounting incessantly, and the results are being disseminated widely, but the product that may emerge is not clarity but chaos, not clinical comprehension but mathematical mysticism, not a shining marvel of human science but a gaudy pastiche of electronic art." *Ibid.*, p. 802.

13. "Mesmerized by the molecular goals of "basic science," many medical schools have now begun to change their curricula, emphasizing the study of cells more than symptoms, of chemistry more than community, and of microscopy more than man. Although this laboratory concept of medical science may belittle the scientific worthiness of patient's statements and problems and may disparage the clinician's efforts to be a *clinical* scientist, the concept has become a dominant theme in medical education today." *Ibid.*, p. 802.

14. "Dysphagia is not a symptom likely to be produced by an emotional illness, and an organic cause should always be sought." Leading Articles, *British Medical Journal*, 4 February 1967, p. 256.

15. "Depression, like the poor, is with us always. Indeed, I am often inclined to think that few of us can expect to go through life without experiencing at least one depressive episode—though whether either we or our physicians will recognize its nature is perhaps another matter." Miller, Henry, M.D., "Depression," *British Medical Journal*, 4 February 1967, p. 258.

16. " . . . Schizophrenia in a family spells social decline, while the innate seriousness and obsessionalism often found in those prone to depressive illness may actually promote social advancement." *Ibid.*, p. 258.

17. "Endogenous depression rarely affects the feckless inadequate patient whose history reveals a repeated pattern of escape from life's difficulties through symptoms often regarded by psychiatrists as psychoneurotic, and sometimes by the rest of

us as bogus. Secondly, the illness strikes often and most dramatically in an unexpected way at the stable, energetic, extroverted, middle-aged "success." Thirdly, it also frequently affects the equally worthy subject of a chronically depressive personality—the kind of patient who has soldiered on effectively but unhappily for many years, and perhaps throughout life, subdued in manner and often gloomy in outlook." *Ibid.*, p. 258.

18. "The most pathognomic clinical feature of endogenous depression is a distinctive pattern of sleep disturbance . . . . . The depressive patient may go to sleep almost as soon as his head touches the pillow, but his sleep is broken, often with almost monotonous regularity at the same hour of the early morning." *Ibid.*, p. 259.

19. "The second feature to which I would draw your attention is that *the patient with depression feels ill, looks ill, and is ill.* Often he does not volunteer depression as a presenting symptom, and he may even deny frank depression of spirits, though this is usually admitted on questioning. More consistent is a loss of well-being, a loss of zest, of drive, and feeling. Such patients will often say that they have lost all normal feelings for their families. On the other hand, they may be near tears the whole time, and break down in a paroxysm of weeping at a mildly sentimental television programme. The patient is apathetic and easily exhausted, and all his activities have contracted. My colleague, Dr. Robert Orton, has coined the excellent aphorism that the neurotic gives up his work, while the depressive abandons his pleasures." *Ibid.*, p. 259.

20. "The third point to which I would draw attention is that in all but the mildest cases there is *evidence of physiological disturbance.* Loss of appetite and weight, and failure of sexual interest, are almost invariable. Constipation is common, and may lead to a suspicion of growth in the large bowel." *Ibid.*, p. 259.

21. "The fourth feature of *diurnal variation* is characteristic though not invariable. Most patients are worst in the mornings and improve in the evenings, especially after taking a little alcohol." *Ibid.*, p. 259.

22. "Though I have never encountered a case of classical paranoia, I have met many people, both professionally and socially, whose excessive tendency to attribute their difficulties to the shortcomings of others justifies their categorization as paranoid. Again, we are all paranoid, but some are more paranoid than others." *Ibid.*, p. 260.

23. "Everybody over 50 has spondylosis, and nearly everybody over 50 has occasional pain and disability on this score. Sometimes this reaches a periodic crescendo on a purely physical and local basis, but such increased disablement is often due to a superadded depression. Many of the patients who walk the streets in cervical collars would probably be better off with amitriptyline.

The differentiation of depression from dementia in the aged patient is often difficult. The severely depressed patient is too retarded, too inattentive, and too preoccupied with his misery to give proper attention to formal psychological tests, and even in expert hands the distinction may be impossible. Furthermore, both elements may be present, the mildly demented patient presenting to his doctor with frankly depressive symptoms. Again, a therapeutic trial is the best diagnostic test . . . . The clinical improvement induced by amitriptyline in patients of this type may be dramatic, often confirming that even where a nucleus of dementia remains most of the patient's overt disability was in fact depressive." *Ibid.*, pp. 260–261.

24. ". . . Like most of those who have worked in this field, I too have had my tragedies, and one important lesson I have learned is that even where serious organic disease is present a coincident endogenous depression may represent a more serious immediate threat to the patient's life than the physical disorder and should have priority in treatment. It is also important to remember that the recovering patient is often at greater risk than the severely retarded depressive. Suicide within a few days of discharge from the hospital after clinical improvement is all too frequent." *Ibid.*, p. 261.

25. " . . . It is also axiomatic that once a really effective treatment is produced for a disease it becomes a general-practitioner disease. Antidepressive drugs will bring relief to more than three-quarters of all patients with endogenous depression, whether they are administered among the rhododendrons of the Crichton Royal or in a back street in the Gorbals. Most of the depressives referred to formal psychiatrists today are either undiagnosed, half-treated with inadequate dosage, or imipramine-fast." *Ibid.*, p. 261.

26. " . . . In the hands of some mental hospital psychiatrists the routine employment of electric convulsion therapy continues, sometimes, it seems, merely because the machine is there and the operator is familiar with its use. It still has an important place, but the need for its employment has been reduced by the development of effective drug treatment. . . . Four out of five cases of endogenous depression respond to antidepressive drugs, and during recent years I have needed to resort to electrical treatment not more than three or four times a year out of an average of about 100 new cases." *Ibid.*, p. 261.

27. " . . . I most often use amitriptyline (Tryptizol, Elavil), especially in the agitated and elderly patient. Where retardation is conspicuous, imipramine (Tofranil) is perhaps marginally preferable. A sleeping-tablet is usually necessary, though in

severe depression even the most powerful hypnotics may be ineffective until the condition is controlled by antidepressive treatment. Tranquilizing drugs, such as sodium amytal or chlorpromazine, are useful in the early weeks where agitation and anxiety are prominent." *Ibid.*, p. 262.

28. " . . . Such patients need to be told that, though we do not know the exact nature of the metabolic disturbance that caused depressive illness, we believe that some such disturbance is the basis of the condition, and that the antidepressive drug is a form of replacement therapy for them analogous with insulin for the diabetic, and just as respectable." *Ibid.*, p. 262.

29. "Above all the general physician (G. P.) must get back into contact with the hospital. This will bring an end to the effects of isolation so depressingly described by Dr. Whinney in the *Lancet* of 14 January: "The crisis in general practice has often been viewed in economic terms, but rarely in terms of social psychology. If a group of people are segregated, isolated, humiliated, and denied an outlet for their natural ambitions, their behaviour will often be aggressive, regressive, or apathetic. This is the classical revolutionary situation." "Pertinax," *British Medical Journal*, 4 February, 1967, p. 295.

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RADIOLOGIC REFLECTIONS

Shadow or substance

Marcus J. Smith, MD, Santa Fe, New Mexico

Apothegm

If at first you don't succeed,
Try, try again.
—Hickson

Clinical data

A 38-year-old man had experienced excrutiating epigastric pain, radiating to the back, for 12 hours. He was bent over, clutching his abdomen. During the previous six weeks he had noted alternating diarrhea and constipation, and had lost 10 pounds. There had been no vomiting or bloody stools. The patient was afebrile; his blood pressure was 140/90. The abdomen was diffusely tender and soft and there was some suggestive rebound. His white cell count was elevated, but serum amylase, calcium, sugar, bilirubin and VDRL studies were normal. There was a moderate hemoconcentration.

For the previous eight years he had been treated for a duodenal ulcer with Maalox, Probanthine and Librax, but he had never been completely free of epigastric discomfort. He had received corticosteroids for moderately severe gouty arthritis.

Radiologic study

There was no evidence of free aid beneath the domes of the diaphragm. Barium given by mouth appeared trapped in the stomach and duodenal bulb for about five hours, but an ulcer deformity could not be demonstrated. A small amount of barium trickled into the small intestine and showed a dilated jejunal loop (Fig. 1) with tiny spicules extending beyond the lumen.

Clinical course

After a short period of observation during which the temperature rose and more abdominal tenderness appeared, the patient was explored. An abnormal loop of distal jejunum was resected;

Fig. 1

this was thickened, edematous and hemorrhagic; regional mesenteric nodes were massively enlarged. The abnormal jejunum showed hemorrhagic enteritis and areas of early infarction. Mesenteric arteries showed changes of periarteritis nodosum.

The patient was sent home on steroid therapy. During the next two years he reported episodes of abdominal pain and intermittent claudication.

Epicrisis

It has been suggested[1] that compression of the duodenum by the mesenteric root is a nonspecific finding seen in such acute abdominal conditions as acute pancreatitis, bowel infarction, enterocolitis or acute duodenitis, probably as a result of inflammatory edema and lymphangitis in the mesenteric root. This mechanism of obstruction of the duodenum is different from that caused by the superior mesenteric artery, although the radiologic appearance is similar. Such a mechanism is postulated to explain the duodenal obstruction in the present case.

We once knew a clinician who suggested the possibility of periarteritis nodosum at clinicopathologic conferences whenever the diagnosis was obscure. He was never correct. It is unfortunate that he did not know about this patient.

ACKNOWLEDGEMENT

I am indebted to Dr. Charles J. McGoey and Dr. Philip L. Shultz for permission to use this material.

REFERENCE

[1] Simon, M., and Lerner, M. A.: Duodenal Compression by the Mesenteric Root in Acute Pancreatitis and Inflammatory Conditions of the Bowel. Radiol. 79:75-81, 1962.

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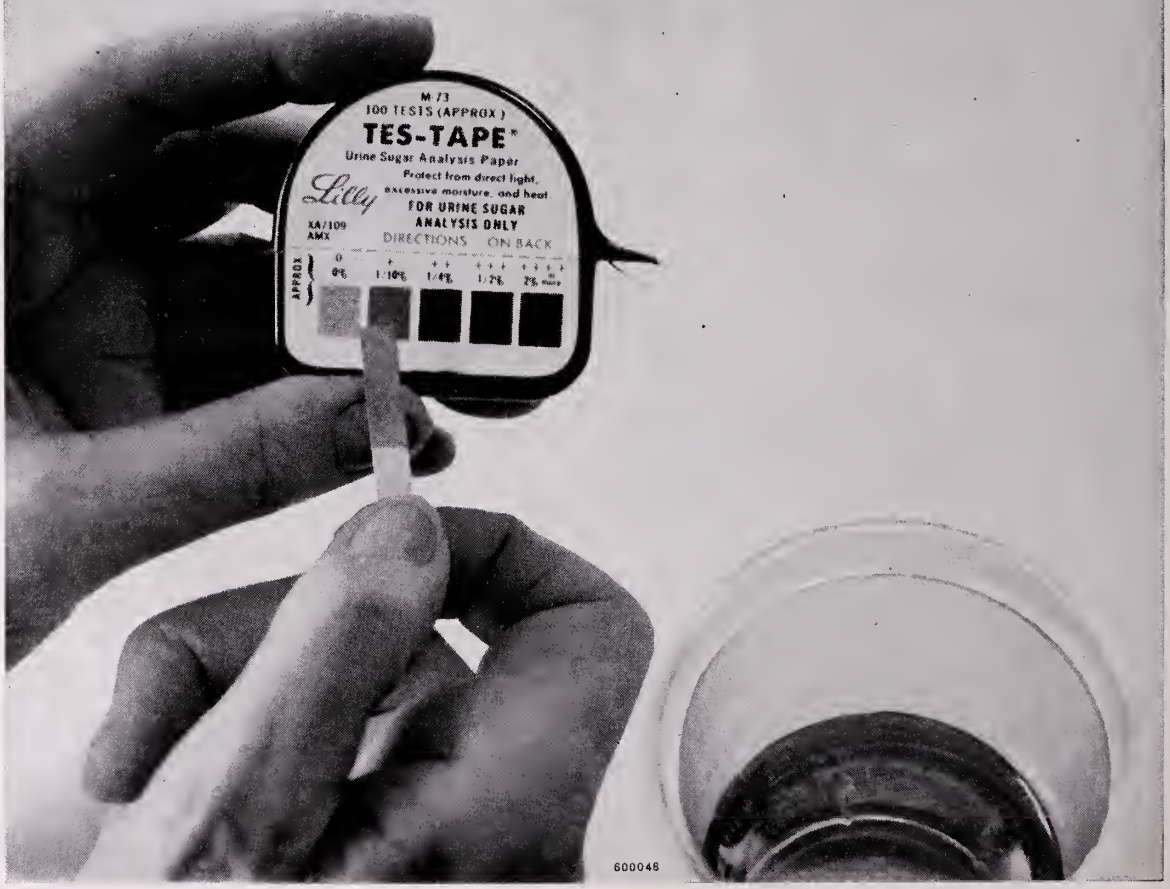


Free Enterprise in Medicine

Sitting in the hospital, at the bedside as a relative rather than physician, gives us a different viewpoint on the medical profession. Associating with our colleagues every day as fellow physicians is far different than being with them as clinicians for our own families.

Having recently gone through such an experience reminds me that, after all, to our patients and their families we have been entrusted with the lives and fortunes of the patients and their families. And in addition to this trust goes respect for and admiration of the doctor. It is this trust, respect, and admiration which we as physicians must maintain if we are to retain any free enterprise in the practice of medicine. I wish I could foresee into the future enough to predict when our patients will have had enough of slander and harassment of American medicine, by those wishing to socialize medicine and the American way of life, to stand up and protest en masse.

Speaking from the other side of the bed now, it makes me most unhappy to hear my doctor accused of being calloused, heartless, and a money grabbing individual subsisting as a leech on the illnesses of humanity. I resent this description of my family physician —and I think that this applies to the majority of families throughout the country. With most people continuing to hold the medical profession, as individuals, in high regard, it is so necessary for us as a profession to continue to make medicine the personal item that it is and not tend to become impersonal robots, knowing only the patient in room X, bed Y.

Also, it has become most important that physicians remain constantly aware of the various government programs so that we can, in so far as possible, present a united front to this ever increasing problem of government intervention. It is distressing to see any degree of external fragmentation of our Medical Societies. Internal dissension and discussion is good in development of ideas but to present this to the public as a battle between specialists and general practitioners or abdominal surgeons versus members of the American College of Surgeons serves only to play into the hands of the social planners. What better could they ask for in their ultimate plan of divide and conquer!

So when next you make your rounds in the hospital, remember who you are and what you are to the people on the other side of the bed. Let us resolve to continue making American medicine the best and most personal care available. I assure you that Washington and all its propaganda will not then succeed in burying free enterprise medical care. But relax your vigilance, become the impersonal, heartless, money grabber we have been accused of being and our friends on the other side of the bed will be our friends no longer. Then rest assured you will see the end of American medicine as we know it today. The challenge is yours and I think that you, as individual physicians, will be able to meet it and ultimately win.

Emmit M. Jennings, M.D.
President, New Mexico Medical Society

Legend for Sandpainting

This is the first sandpainting used by the medicine man in the coyote ceremony. The four butterflies lie on pollen paths leading to the central spring of water. The larger designs are the various homes of the coyote at different times of the day—dawn, noon, evening and night.

Navajo sandpaintings are an integral part of healing or blessing ceremonies performed by the chanter (the Medicine Man) or his assistant to a petitioner or patient. Hero myths are recreated by means of the sandpaintings and the petitioner believe that specific healings are associated with each story.

Silk screen reproductions of some sandpaintings are available from the Museum of Navajo Ceremonial Art, P.O. Box 5153, Santa Fe, New Mexico 87501.

We Are Sick, Sick, Sick . . .

Some people collect stamps, some collect coins. Recently I began to collect statistics upon the prevalence of specific diseases and disorders in the United States. These came from such sources as popular magazines, radio, and brochures of fund-raising organizations. To these I added figures found in medical journals, including such venerable publications as the JAMA and the RMMJ. The following list indicated the number of cases of a disorder in the population in one year, although the specific year was not always stated. Often the published statement read, "At least X million people in the United States suffer from Y disease."

Alcoholism	5,000,000
Amebiasis	9,500,000
Arthritis	13,000,000
Asthma	4,500,000
Birth defects	15,000,000
Cerebral palsy	3,500,000
Convulsive disorders	1,000,000
Diabetes	4,000,000
Diverticulitis	1,200,000
Gonorrhea	1,500,000
Hearing impairment	5,000,000
Heart disease (known)	21,000,000
Heart disease (unknown)	12,500,000
Injuries (needing medical attention)	18,000,000
Mental illness	18,000,000
Mental retardation	5,000,000
Peptic ulcer	2,500,000
Pulmonary emphysema	10,000,000
Stroke	2,000,000
Trichinosis	5,000,000
Tuberculosis ("have been infected")	35,000,000

It is to be noted that the list does not include such "minor" (less than a million cases per year) disorders as multiple sclerosis, nephritis, cancer, syphilis, or even pneumonia, and despite these omissions, the summation of the entries on the list exceeds 192 million, showing that morbidity exceeds population.

Of course there must be duplication of individuals in this tabulation. Some alcoholics will die in automobile accidents. Some diabetics are psychotic. But this does not entirely explain the apparent absence of healthy individuals in the country. A partial explanation is the possibility that organizations use "scare-technic" to over-emphasize the prevalence of the diseases they strive to conquer. Or the clinical investigator, wishing to stress the importance of his report upon four cases of a particular disease, prefixes his article with an uncritical estimate of incidence in seven figures.

A more reasonable explanation would seem to be that we are victimized by the statistical method of extrapolation, used by necessity since no one really knows the true incidence of a disease, not even the reportable communicable diseases. One can only count a few known cases and then multiply by appropriate factors, assuming that what is happening in one geographical area is true elsewhere, and will be true next year.

However, if these figures are true, then it would seem, as in the words from "West Side Story," that "We are sick, sick, sick. We are very, very sick."

If so, our enemies are wasting their time trying to subvert us. They should attack immediately, and we would be too unhealthy to resist. The trouble with this concept of military science is that after casually scanning morbidity statistics of our enemies, perhaps they are too debilitated to launch an invasion. They, too, are dying of extrapolation.

Marcus Smith, M.D.*

*Scientific Editor, New Mexico Section, Rocky Mountain Medical Journal.

6/9 SEPT. 1967

"Medicine is changing-are you?"*

Tom L. Carr, MD, Albuquerque, New Mexico

My being here on this rostrum is definite indication of a change. From a personal viewpoint, this is good and a welcome change. I have enjoyed my year as president and the honor has been greatly appreciated. However, I am privileged and proud to step aside after this meeting for the new president, Emmit Jennings, to take over. Charles Hudson, M.D., president, American Medical Association, recently stated, "The climate of medical practice in this country is changing and physicians and their medical societies must change along with it."

Our whole society is changing rapidly in every sphere of operation. Think with me for a moment of the many changes that are occurring daily:

1. Crime. Did you ever think of it being unsafe for your wives to walk down the street alone in this great country?

2. Birth rate. With the rapid pace our population is growing we will be pressed to raise sufficient food for their bodily needs.

3. Suicides. Our suicide rate is increasing so rapidly that the wave of suicides following the stock market crash of 1929 will be put to shame. We are further informed that the rate is highest among high school children. Our Bernalillo county data recently evaluated by Dr. Sol Papper agrees with nationwide suicide statistics. I could go on indefinitely.

Our medical societies on a local level should be diligently looking for areas of unmet health needs and familiarizing itself with the various government programs that are in existence or in the planning stages. Medical societies must strive to eliminate the areas where need for health care is apparent. If we don't—you know who will. And we may be neglecting health needs that are totally unrecognized by planners who lack the nine to fourteen years of medical education represented by every man in this room.

Recently we received a comprehensive program for building a four-doctor clinic in Cuba and Bernalillo, New Mexico. A group of people had been working on this program for some time, perhaps with a research grant, and now had arrived at their conclusions and filed a grant for construction funds. The medical society was never once contacted until the report was prepared and mailed. We must ever have our exploring antennae extended to learn what is going on and what programs are being discussed.

These study groups are well intended, in most instances. However, they must have guidance and counseling from the medical profession in matters pertaining to health. The initiative for providing the leadership resides with the profession. Many times the people will not ask your advice on such matters because they know you are overworked and they do not want to bother you.

Our medical society has experienced many changes in order to better serve the public, our community and our country. We are becoming more specialized since we need individuals who can concentrate on certain areas and in these areas become proficient:

Our Fee Committee. You will recall that two years ago we had a different fee schedule for eight or ten different agencies. The House of Delegates ordered the establishment of a Fee Committee who would negotiate all third party contracts for us. I invite you to study the most informative and successful report of this committee, the one contained in the Delegates' Handbook for this session.

*Presidential address delivered at the 85th Annual Meeting of the New Mexico Medical Society, Santa Fe, May 19, 1967.

The Adjudication Committee. In all areas where we have agreements and, in fact, to all commercial insurance companies, if they have a question with regard to charges and services—this committee of physicians will be glad to review the case and render an unbiased opinion. This committee, in its first year of operation, has been very busy.

Medical-Legal Panel. This panel of lawyers and doctors has heard 18 case to date and has another one to be heard in the near future. Two cases were reviewed but not formally heard. This panel has an outstanding record of achievement and we are indebted to our lawyer friends. Approximately 40 per cent of the cases have been decided for the plaintiff, 60 per cent for the M.D.

Yes, your medical society has found it necessary to change. In fact, to become more specialized in order to be of better service. We will continue to look for areas where we might be available to lend our medical experience in order to improve our community and be more helpful.

Changes in practice of medicine

The practice of medicine in our state is also undergoing a rapid change. In general, the medical practice in this state can be divided into four compartments, as follows:

1. A designation based on a single physician primarily based in one or more hospitals and a private office.

2. A designation that includes two or more partners or associates who together conduct a general or specialty "like-type" practice.

3. A category of physicians in a group that is well organized with an administrator serving an association of general practitioners, specialists and technicians.

4. An emerging group of physicians (for New Mexico) with primary responsibility for guiding the education of newly selected students of medicine. They also search for patterns of patient care that permit the most efficient use of their chosen environment and at present they espouse peripheral pilot health centers with specific geographic limits to supplement the traditional out-patient clinics and hospital based practice of past years. They also plan traveling clinics to aid in sharpening the diagnostic and therapeutic acumen of all New Mexico physicians.

How many physicians practice in each of these compartments?

During 1966, 62 per cent of all physicians in New Mexico were practicing in a wholesome hospital based environment with other physicians in compartment one.

Nine per cent of all physicians were in group two of "like-type" general or specialty practice, also oriented with a well organized hospital.

In clinic practice with an administrator, we find 12 per cent of New Mexico physicians presenting broad skills as they participate in the third group. This group also has traditional hospital relationships for patient care.

In our newly emerged compartment four, we find 17 per cent of our physicians in 1966 in New Mexico are affiliated with the University of New Mexico School of Medicine as faculty members, residents, interns and as full-time members of the staff of the Veterans' Administration Hospital in Albuquerque. This is today the second largest compartment of physicians in New Mexico.

It is obvious that 17 per cent of the physician population of the state should provide an impact on a portion of health service to the community and state. So, too, should they provide an impact on our New Mexico Medical Society. Members of the faculty have been most gracious in accepting our requests for help as is evidenced by our clinical program this year.

Importance of society membership

There is one important area in which the school should make a greater impact on our society and that is in the area of membership. A very small percentage of the physicians in this compartment choose to make application to their county and state society as active dues-paying members. The overwhelming majority prefer to join as an associate member with a greatly reduced dues payment. From my honest opinion, this dodging of payment of dues is not as it should be.

I am most familiar with medical schools which have a "pooled-fund" from which the total dues of the staff members is paid to the parent medical organizations, namely the county society, state society and American Medical Association. The risk of causing a

breach in our ranks is too great. Therefore, I urge our medical school officials to immediately work out a plan to avoid friction in this area. I believe that we have as healthy relations between our practicing physicians and those in the academic field as any university medical school of my knowledge and we should all be dedicated to continuing this vigorous rapport.

From statistics provided by New Mexico Department of Public Health we find that 13 per cent of the population of the state was discharged from the 49 hospitals of our state during 1966. Ninety-five per cent of these citizens were under the care of medical doctors for their sojourn of diagnosis and treatment. Forty-eight of our hospitals discharged or admitted 134,172 patients during 1966. The Veterans' Hospital in Albuquerque discharged an additional 5,663.

Thirty-seven per cent of all hospital discharges for 1966 were from Bernalillo County and 45 per cent (365) of the total physician population of the state reside in Bernalillo County.

Now let us analyze the average number of patients discharged by each physician from his community hospital.

When we do this, we find the fewest patients per physician were discharged from Albuquerque hospitals (101 per physician in 1966). The greatest number per physician was from Clayton (868 for each M.D.), and the median discharge rate was shared by Hobbs and Alamogordo with 226 discharges per physician in each community.

A few general facts stand out from the information I have given you:

I was surprised to note the second largest compartment of physicians in the state are now oriented with the U.N.M. Medical School and V.A. Hospital. Further, the equivalent of 13 per cent of New Mexico's population had an illness in the hospitals of New Mexico during 1966.

I had not anticipated the wide community variation of the rate of hospital discharge for the "average" physician. From a high of more than two and one-third people per day for 365 days to a low in Los Alamos and Albuquerque of 28/100 of a patient each day during 1966.

All of the ill citizens of New Mexico were not those in hospitals during 1966 and some likely were not ill at all during the year. However, discrete projections indicate an "average" of at least thirteen out-of-hospital, physician-provided health services were enjoyed by every person in New Mexico last year.

Your part in planning

The above results of my research reveal that change in the medical population and practice in this state is occurring daily and rapidly. We have no reason to supect that the trend will be other than more change and perhaps at a more rapid rate than has been our past experience. Therefore, the physicians of this state and their medical societies must accept change—indeed they must find a responsible position in accepting leadership in planning and implementing changes that will benefit our patients or we will find these changes occurring without our assistance and knowledge. It will be much easier to work under plans prepared with our guidance and assistance than working under these same plans which were prepared without medical assistance.

Government involvement in medicine is less important in the form of medicare as it is now than the form it may take in the future.

We have experienced the fact that when medicine has been united in this state we have been able to negotiate schedules and contracts to our advantage. One of the most important single facts that I have learned during the year as president is how very important it is for all of us to be united in our thoughts and actions. Our society does not lend itself to solo actions—particularly at this time.

There have been many changes in our society and the method of practice in this state during the year. We anticipate that this changing pace will continue. With the new officers you have elected at this meeting, I am certain our society will keep pace with these changes. I urge you to assist in these changes by lending your support. Medicine will undergo many changes in the future —will you change with medicine? •

Hypoventilation and myxedema*

Richard S. Watts, MD, and William S. Curran, MD, Albuquerque, New Mexico

Case report describing the unusual association of these two conditions. Detailed pulmonary and endocrine studies are presented.

DURING THE PAST FEW YEARS the hypoventilation syndrome has become an increasingly familiar entity. Special interest was aroused by reports of the so-called "Pickwickian Syndrome" of extreme obesity described vividly by Burwell, et al.[1] With the increasing availability of electrodes for the accurate measurement of oxygen and carbon dioxide pressures in arterial blood, hypoventilation has been detected more often, and causes other than obesity have been described,[2] including impairment of the response of the respiratory center to CO_2[3] (Table 1). Suspicion of hypoventilation is aroused by the occurrence of somnolence and cyanosis in a patient without obvious disease of the heart or lungs. Further investigation will disclose the characteristic elevation of arterial blood CO_2, anoxemia and, when more advanced, polycythemia and right heart failure.

TABLE 1

Causes of the Hypoventilation Syndrome

1. Severe Lung Disease
2. Neuromuscular (Polio, strokes, encephalitis)
3. Skeletal (Kyphoscoliosis, extreme obesity)
4. Uncertain
   a. Abnormalities of the respiratory center
   b. Myxedema

*From the Department of Medicine, University of New Mexico School of Medicine and the Pulmonary Disease Section and Radioisotope Service, Veterans Administration Hospital, Albuquerque, New Mexico. R. S. Watts, M.D., is Chief, Radioisotope Service, VAH, and Assistant Professor of Medicine, University of New Mexico School of Medicine. William S. Curran, M.D., is Assistant Dean and Assistant Professor of Medicine, University of New Mexico School of Medicine, Albuquerque, New Mexico.

Myxedema is not usually thought of as a cause for hypoventilation unless coma is present.[4, 5] We have recently studied a patient in whom hypoventilation apparently was precipitated by myxedema, both problems disappearing when adequate treatment with thyroid was administered. An interesting family history suggesting a genetically determined disorder of thyroid hormone production was also uncovered.

CASE REPORT

A 44-year-old, married, white male was admitted to the Veterans Administration Hospital, Albuquerque, New Mexico, on May 28, 1965, complaining of generalized swelling. He had a past history of urticaria, recurrent psoriasis and chronic anxiety, but had been able to work full time as a clerk. For several months he had observed some hoarseness and loss of libido. During the week before admission there had been ten-pound weight gain, somnolence, and swelling of the face and extremities. He denied respiratory symptoms.

On examination he was short, moderately obese (5'4", 186 pounds) and somnolent, with conspicuous cyanosis increasing during sleep and improving when aroused. His thyroid was palpable but not enlarged, and his face puffy. Pink papules typical of psoriasis were present on the abdomen and legs. There was probable delay in the relaxation phase of the ankle jerk. The remainder of the physical examination, chest x-ray and electrocardiogram were normal. Routine and thyroid function studies are summarized in Table 2.

TABLE 2

Patient	*Normal*
Hemoglobin 19.1 gm/100 ml	15–18.7
Hematocrit 59%	44–54
Cholesterol 245 mgm/100 ml	150–250
Basal Metabolic rate −24%	±10
Achilles reflex time 445 millisecs	260–380
Protein bound iodide 3.2 μg/100 ml	4–8
Butanol extractable iodide 1.5μg/100 ml	3.2–6.4
24 hr. I^{131} uptake 25%	7–35
After desiccated thyroid 120 mgm daily for 3 weeks 4.8%	Less than 7
Resin uptake I^{131} (T_3) 23%	25–35

Initial treatment consisted of intermittent positive pressure breathing (IPPB) and a 500 ml phlebotomy, which was done because of clinical impression of early right heart failure and polycythemia. By the third week, weight loss of eleven pounds had occurred and cyanosis had disappeared. At this time he was placed on desiccated thyroid 120 mg daily. There was further weight loss of five pounds, decreased facial swelling and increased alertness. Four weeks after admission, an open biopsy of the thyroid was done. The gland was grossly normal but microscopic examination showed some lymphocytic infiltration and moderate interstitial fibrosis (Fig. 1). The patient has remained well for a year and a half on 180 mg of thyroid daily, with his weight remaining at about 175 pounds. A TSH stimulation test in November 1966 showed 15 per cent uptake, indicating possible residual activity of his thyroid.

The patient's striking family history of thyroid disease is outlined in Fig. 2 and Table 3. His parents are first cousins, and out of eight close relatives examined, six have evidence and/or history of thyroid disease. Thyroid hormone biosynthesis studies in the patient and his relatives show that he and one sister have in their serum a metabolically inactive iodinated protein. Because of this, the serum protein bound iodide was only slightly reduced although his butanol extractable iodide was in the myxedema range. Also confusing

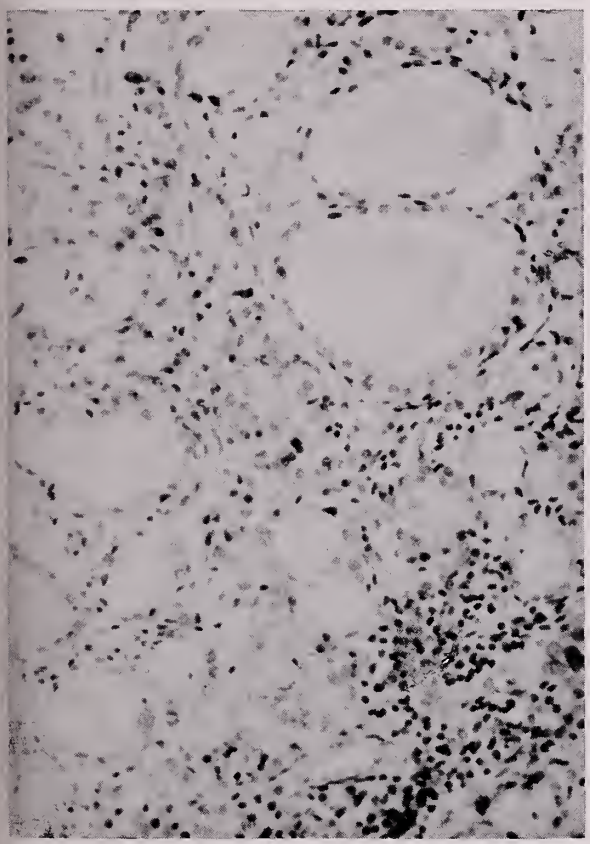
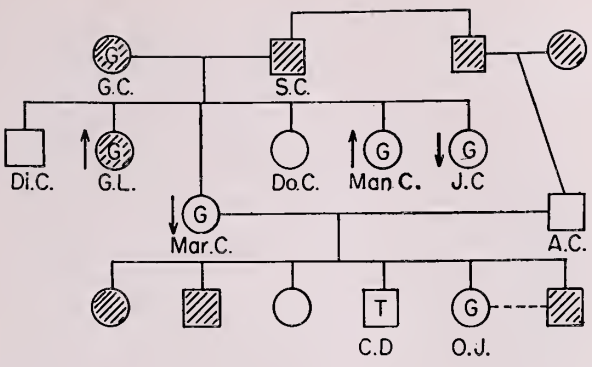


Fig. 1. Thyroid biopsy specimen demonstrating lymphocytic infiltration and interstitial fibrosis.



Expired or not available for examination
Hyperthyroidism
Hypothyroidism
G Goiter, past or present
T Thyroiditis
--- Twins
Male
Female

Fig. 2. Familial thyropathy.

the diagnosis of myxedema was the normal radioiodine uptake; because of his metabolic defect the patient could trap iodide normally but could not make thyroid hormone in adequate quantities, as other studies of thyroid function clearly show.

Discussion

In recent years lymphocytic thyroiditis (or in its most severe form, Hashimoto's Thyroiditis) has been recognized as a fairly frequent cause of myxedema.[6] Our patient did not have any of the clinical symptoms of thyroiditis nor did he have the characteristic "Askanazy cells" in his thyroid biopsy specimen. Finally, no anti-thyroid antibodies were found in his serum (although these may be absent in 20 per cent of patients with typical Hashimoto's Thyroiditis). It is possible, therefore, that his myxedema might have been due to some other cause, such as exposure to a goitrogen superimposed on his genetically determined disorder of thyroid hormone production.[7] Review of the slides by the Armed Forces Institute of Pathology indicated that the changes were consistent with a non-specific type of lymphocytic thyroiditis.

Since there is some evidence that our patient began to improve on IPPB alone, it is possible that his hypothyroidism was transient, as is said to occur in lymphocytic thyroiditis.[8] A similar temporary myxedema

TABLE 3

Column Chromatography of Serum^{131} in Patient and Relatives

Subject	Age	Protein Bound Iodine μg/100 ml	Butanol Extractable Iodine μg/100 ml	48 hour Activity of Serum Fractions** Iodoprotein %	MIT, DIT %	T_3, T_4 %	Iodide %
Normal range		4–8	3.2–6.4	8.3±0.3	1.4±0.3	11.0±1.7	79.2±7.4
Patient—C. D.*	44	5.3	1.5	60	2.3	9.5	28.2
Sister—O. J.	37	14.0		29.7	1.4	3.4	65.5
Mother—Marc. C.	73	7.3		6.0	0.5	1.7	91.8
Father—A. C.	72	6.3		5.5	6.7	2.3	85.5

*Serum obtained during partial recovery from thyroiditis.

**MIT: Monoiodotyrosine. DIT: Diiodotyrosine. T_3: Triiodothyronine. T_4: Thyronine.

We are grateful to W. A. Reilly, M.D., Chief of the Radioisotope Laboratory, and E. C. Sneider, Research Chemist, Veterans Administration Hospital, Phoenix, Arizona, for these determinations.

might be caused by some other exacerbation of his basic genetic defect. We are unable to fully document any spontaneous recovery of thyroid function. The normal TSH test after 18 months of thyroid extract is not conclusive, and we have not as yet been able to persuade the patient to stop therapy.

Following recovery from the hypoventilation syndrome, the major abnormality in pulmonary function of our patient was virtual absence of response to inhalation of 5 and 7 per cent CO_2, a procedure which normally produces four to eight-fold increase in minute ventilation.[9] In addition, his diffusing capacity was only two-thirds the predicted normal. Both of these defects persist after more than a year of treatment with thyroid (Table 4). The remainder of his pulmonary function is relatively normal, the slight reduction of volumes and flow rates being far less than that found in patients with "under-ventilation of the lungs" described by McNichol and Pride.[10] The initial inability of the patient to elevate his arterial oxygen tension over

TABLE 4

Test of Respiratory Function

	Predicted Normal	5/25/65	6/9	7/13	9/27	6/2/66
Vital capacity, liters	3.9	2.7	3.3	3.2	3.3	3.3
One second vital capacity, per cent total	85	85	75	87	88	88
Residual volume, liters	1.2	1.0		0.8	0.9	
Tidal volume, liters		.400		.388	.404	
Total lung capacity, liters	5.2	3.7			4.2	
Residual volume						
Total lung capacity, per cent	24	27		20	21	
Maximum expiratory flow rate, liters/sec	8.3	5.7	5.9	5.1	6.6	
Maximum breathing capacity, liters/min	132	41	65	79	83	
Arterial blood studies (Altitude 5300 ft.)						
Arterial oxygen, mm Hg.						
Rest	75	47	64	52	64	
Exercise		69				
100 per cent O2	>300	240				
Arterial carbon dioxide, mm Hg.						
Rest	35	56	34	41	35	
Exercise		39				
100 per cent O2		40				
pH (rest)		7.38	7.41	7.39	7.37	
Diffusing capacity (steady state) cc/mm/min	18.6		12.3		12.3	12.9
Physiologic dead space, liters	0.140			0.112	0.096	
Minute ventilation, liters/min						
Rest			8.5	5.0	6.5	
5 per cent CO_2	>20			5.0	8.5	5.5
10 per cent CO_2				8.6		
Alveolar ventilation, liters/min			5.4		5.7	

240 mm while breathing 100 per cent O_2 was apparently related to a shunting effect from shallow breathing during that test, since his response was normal (300-500 mm at our altitude) when he was instructed to take deeper breaths. It is possible his moderate obesity influenced his breathing patterns. None of his relatives gave history suggesting hypoventilation, but studies of their response to CO_2 breathing would obviously be of interest. Another unanswered question is the effect of altitude (Albuquerque, 5300 ft.) on respiratory center responses.

As previously mentioned, and in our own experience, the occurrence of the hypoventilation syndrome in myxedema without coma is rare. According to careful work by Wilson and Bedell,[4] patients with myxedema do not hypoventilate unless they also suffer from severe lung disease or extreme obesity. (All of their patients in the latter category were at least 75 per cent over ideal weight). Like the patient described by Weg, et al.,[2] our subject lost only a few pounds with recovery from both myxedema and hypoventilation.

Two possible causes for coexistence of myxedema and hypoventilation are (1) that myxedema in some way damages the respiratory center and makes it unresponsive to CO_2 and (2) that the patient possesses a respiratory center with a sluggish response to CO_2 which is aggravated by the occurrence of myxedema. Although we do not know what his response to CO_2 inhalation was before his illness, he remains unresponsive to both 5 per cent and 7 per cent CO_2 after more than a year of treatment with thyroid, during which time he has felt well and remained at work full time. In the study of Wilson and Bedell,[4] some of the patients had a normal CO_2 response and some had a diminished response; in some there was suggestive improvement in CO_2 response with treatment of the myxedema. In our patient we are impressed by the absence of response to CO_2 for so long after correction of the myxedema and recovery from hypoventilation. Also, the family history suggests that a profound genetic defect may be present. For this reason, it would seem a likely hypothesis that this patient has always had an abnormality of respiratory center response to CO_2, but that this was not severe enough to cause hypoventilation until myxedema also supervened. Such a hypothesis might explain why hypoventilation in myxedema without coma is rarely encountered.

Summary

We have described a patient with rather sudden onset of the hypoventilation syndrome who recovered after treatment of coexisting myxedema. The myxedema was thought to be due to lympocytic thyroiditis. A family history of various thyroid disorders was a striking additional finding. Some speculations are presented on the relationship of myxedema to the occurrence of the hypoventilation syndrome and to the prolonged absence of response of the respiratory center to CO_2 stimulation. •

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Pikes peak or bust

An historical note on the search for health in the Rockies

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The search for health, as well as gold, contributed to the development of the west. This is an account of the development of health centers in New Mexico and Colorado, primarily for the treatment of "consumption."

"I will lift up mine eyes unto the hills."
(Psalm 121)

Prehistoric Asians, who were to become the original Americans, moved southward and eastward from Bering Strait. Led by the natural laws of ecology, they sought hunting lands and, later, cornfields. Many centuries later Europeans, moving northward and westward from their first colonies, sought wealth in the form of land and minerals. Spanish conquistadors were driven to explore the whole Southwest by the lure of fabulous Cibola's jewels and gold. After the Louisiana Purchase, published reports of government expeditions spread the word of the resources and trading opportunities of the mountain country and northernmost Spanish settlements. Captain Zebulon Pike explored Colorado and trespassed into Spanish territory in 1807. Major Stephen Long followed him in 1819; and his doctor, Edwin James, became the first man to climb Pike's Peak, which thereby became James Peak until Fremont renamed it in the 1840s. Mountain men ranged from Canada to New Mexico seeking the wealth of beaver pelts for rival fur companies. Their verbal reports helped to build up the interest of easterners in the possibilities of that immense territory west of the Great American Desert. River systems provided graded routes with grass and water all the way to the Rocky Mountains. After Pike's return the McKnight party reached Santa Fe in 1812, only to spend nine years in Mexican prisons.

In 1821 William Becknell and party opened the sixty year long history of the Santa Fe Trail with a successful pack-train journey from the Missouri with goods to trade in Santa Fe. The profits justified the great risks. Travellers returning from the season-long journey of the Oregon Trail up the Platte or the Santa Fe Trail out along the Arkansas reported the benefits of the pure dry air and outdoor life. A new motive for heading west, the search for health, became popular. In his "Commerce of the Prairies"[1] Josiah Gregg describes the "pale-faced invalids" gathered in Independence, Missouri, the Trail's starting point, and his own speedy recovery of health on his first trip in 1831. He also formed a high opinion of the "sanitative effects" of the prairie air and of the salubrity of the climate of New Mexico, which he calls "its most interesting feature." By the time of the California gold rush the health-restoring powers of the West and of the journey to it were generally accepted. Many of the Forty-niners and of their successors, the Argonauts who went to Colorado, were as much in search of health as of gold. Minerals and curative air became the open sesame to the Rockies for the next seventy years.

Santa Fe, a center for trade and health

Many healthy young men were introduced to Santa Fe by the Trail, the Mexican War and the Civil War. That city became the chief center for trade in the new southwestern territories, the seat of government, and the military base, Fort Marcy, for the control of the Apaches and Navajos. To meet the medical needs of the area and of the increasing number of invalids coming over the Trail, Bishop Lamy asked the Sisters of Charity of Cincinnati to send him nurses to establish a hospital. On September 13, 1865, four sisters led by Sister Vincent O'Toole arrived. They promptly set up St. Vincent Sanitarium. This institution, at various times a general hospital, a tuberculosis sanatorium, an orphanage, an old folks home, is still active as St. Vincent Hospital. It was the first hospital in New Mexico and Colorado and the first tuberculosis hospital west of Boston where only two such institutions preceded it.

When the railroads extended out along the Santa Fe Trail the Sisters of Charity set up other hospitals to care for Indians, native Mexicans, ranchers, and health seekers. They founded hospital-sanitariums in Pueblo (St. Mary's in 1882, now St. Mary-Corwin Hospital), in Trinidad (Mt. San Rafael in 1889, now Mt. St. Rafael Hospital), and in Colorado Springs (Glockner Sanitarium in 1888, now Penrose Hospital), all in Colorado. In New Mexico they founded St. Joseph's Sanitarium (now St. Joseph's Hospital) in Albuquerque in 1902, and St. Joseph's Sanatorium in Silver City in 1901. Hotel Dieu was built in El Paso, Texas, in 1894 with a wing to care for the tuberculous patients who were coming by rail to that city in large numbers.

Dr. J. H. Sloan of Santa Fe proposed in 1889 a novel course of treatment by which the cure of phthisis pulmonis would be made "not a probability but a certainly" in 18 months in or near Santa Fe, consisting of 14 months in tents and four months in St. Vincent Sanitarium, "the principal objection being expense." In 1897 an ex-major in the Confederate Army and Indian fighter, Eugene van Patten, was probably the first proprietor of a private sanatorium, "Mountain Camp," in Dripping Springs Canyon east of Las Cruces, New Mexico. Before the end of the nineteenth century the favorable observations of medical officers attached to the various forts in the Southwest led to the establishment of the first two federal sanatoria for tuberculosis: the Public Health and Marine Service Hospital opened at Fort Stanton, New Mexico, in November 1899; and the U. S. Army General Hospital for Tuberculosis opened at Fort Bayard in January, 1900.

Colorado: "Gold in them thar hills!"

Along Cherry Creek in western Kansas Territory gold was struck in 1858 and the rush was on. But by the time that many adventurous young men in the East had organized parties to carry the motto, "Pike's Peak or Bust," across the plains they were too late, meeting returners with the news that the good claims had all been staked. James W. Denver was appointed Territorial Governor and established order in the gold camps. The city named for him was incorporated in 1861, became the capital of the temporary Jefferson Territory in 1867, the year that the railroad reached Cheyenne, and became a city of substance, a federal and financial center, as more gold strikes occurred between 1870 and 1880. Even before Colorado became a state in 1876 it was a "sanitarium" in the then accepted term, a resort with a reputation as an area free of consumption and therefore "sanative." No physician or hospital was considered necessary for recovery, only a short stay in the high, pure air of Denver, Colorado Springs, or Manitou.

However, by 1875 the Winter Home for Invalids was opened in Denver by Rev. Frederick W. Oakes for young men "worthy of a Christian home and presenting a good chance of being benefited by the climate and a letter from some clergyman or from someone the Superintendent knows." This pioneer tuberculosis sanatorium and its reverend superintendent flourished well into the present century. Solly, in his "Medical Climatology,"[2] reported that in 1897 over a fifth of the population of Denver consisted of invalids. No doubt Colorado Springs had an even larger proportion of health seekers.

Although the importance of altitude per se had been of little concern in the original development of New Mexico as a health resort, the physicians who came to Colorado

for their own health or to practice there considered it to be the chief factor in the successful treatment of consumption. The Swiss resorts were proclaiming their respective virtues based upon a theory that a line of immunity from tuberculosis existed at 5,000 feet above sea level. Dr. J. Hilgard Tyndale in his "Home and Climatic Treatment of Pulmonary Consumption," 1832,[3] defined the Line of Immunity as: "that elevation of some particular locality or country at which the atmospheric air is free from germs and enjoys the unobstructed effects of heat, light, and electricity." He quotes Lombard of Geneva about the Swiss experience and opinion. Dr. Charles Denison, in his "Rocky Mountain Health Resorts," 1880,[4] favored the existence of an approximate line of immunity in the Rockies at about 6,000 feet; and this concept was generally accepted by the Colorado experts.

"Camping out" or "ranching," i.e., living on a farm, were the best methods of treatment, according to the Colorado school. Nowhere in his book did Dr. Denison employ the words "hospital" or "sanitarium." The second edition, in 1881, had an identical text plus an addendum containing such items as the change of name of the "Evergreen House" at Morrison to "Sunshine Cottage." Tyndale, on the other hand, had been the Physician-in-Charge at the Rocky Mountain Sanitarium for Consumptives at Manitou from its founding in 1879, and he wrote: "The sanitarium alone offers the highest guarantee of success in the position of the directing physician" and "The benefits of a well regulated sanitarium . . . cannot be over-estimated."

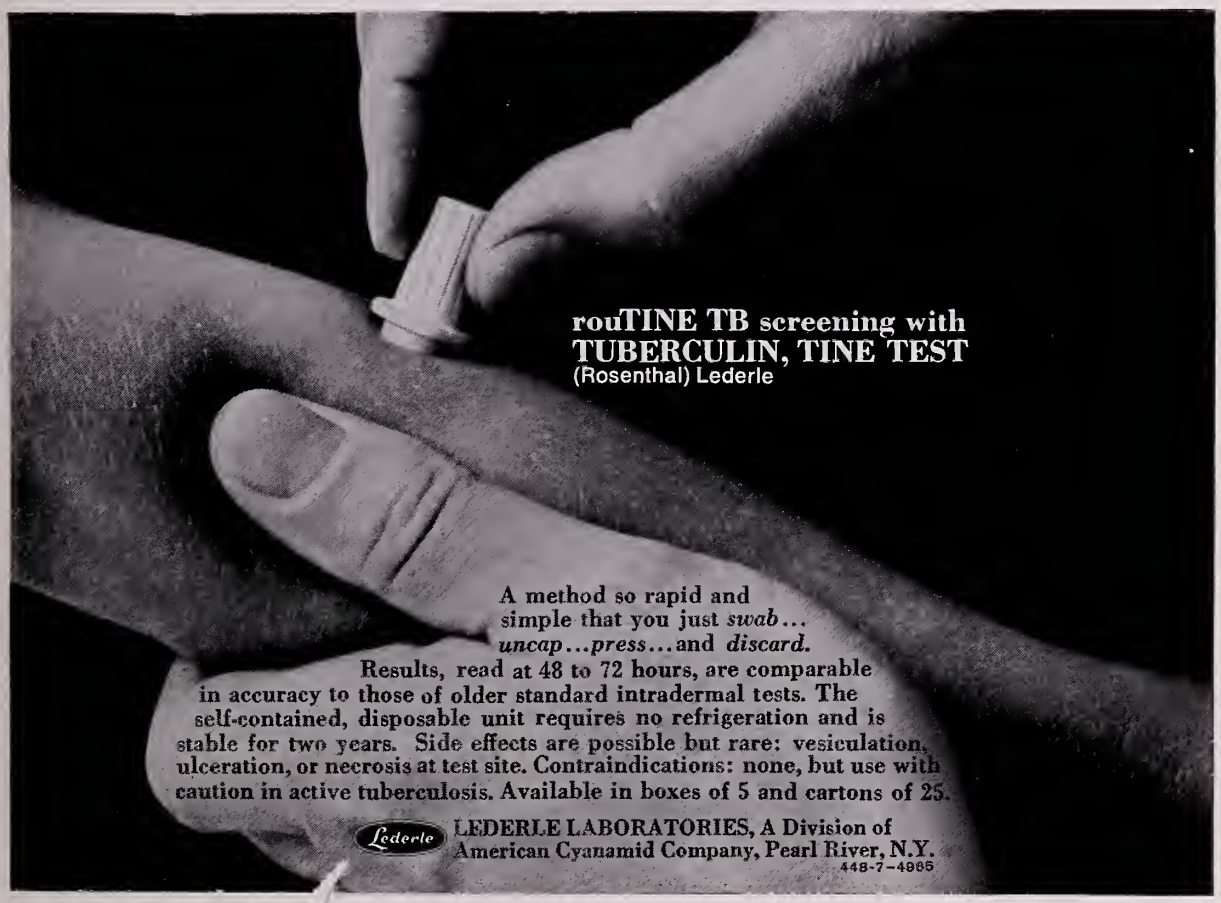
Denison and Tyndale were both charter members of the American Climatological Association, formed in 1884, by which time Tyndale had moved back to New York and published his book. This Association, from its first meeting in Washington, D. C., brought together the proponents of the eastern and western modes of treatment. In general, the eastern phthisiologists-climatologists followed the ideas of Henry I. Bowditch, who advocated a porous soil and piney forest air, and Alfred L. Loomis, who had found the Adirondack Mountains the ideal climate for his own cure and that of his private patients, including Dr. Trudeau. They also were convinced earlier of the need for sanatorium care. They endorsed the cottage type of Trudeau at a medium altitude. Higher altitudes and dryness of air were the active ingredients of the Colorado physicians' prescription, to be taken in the untrammelled freedom of ranches, pack trips, and tenting.

American Climatological Association

At that first meeting of the Climatological Association in 1884 Tyndale read Denison's paper on "Climatic Maps," and Dr. Boardman Reed of Atlantic City moved that Denison's theory about dryness of air be disapproved. In the printed Transactions of that year[5] Denison took his opportunity to reply. At the 1887 meeting Dr. S. E. Solly gave a paper on: "An Invalid's Day in Colorado Springs," stressing outdoor exercise and rides. In 1889 Dr. Paul H. Kretzschmar of Brooklyn covered the topic: "Institutions for the Treatment of Pulmonary Consumption in the United States."[6] He said: "J. H. Tyndale made an effort about ten years ago in Manitou, Colorado, . . . and H. (sic) Gleitsmann before him in Asheville, N. C., to establish such institutions, but both failed for lack of professional support. In Colorado two sanitaria are in the process of erection, one in Lake Palmer to be built and conducted by a stock company of which Dr. Chas. Denison of Denver is the Vice-President, and the other one in Colorado Springs under the management of Dr. S. E. Solly." The latter was probably the Glockner Sanitarium. At the same meeting Dr. Denison indicated that he had been converted to the need for a sanatorium for his fifteen to twenty private patients then "curing" on a ranch ten miles from Denver. As transportation improved bringing more and more patients other physicians also became convinced that Tyndale had been right in his advocacy of sanatorium treatment. And the citizens of the mountain cities came to see the need for institutions to care for various segments of the influx of those seeking health and of moderate means. Chambers of Commerce began to boost their respective climates to attract the more affluent invalids; and the rapid growth of sanatoria began with the new century.

Various railroads contributed their advertisements to Dr. Denison's book about Health Resorts. The Union Pacific had reached Denver in 1868. The Atchison, Topeka & Santa Fe reached Santa Fe (RR station at Lamy) in 1880 and the Mesilla Valley in 1882. The narrow gauge line of the Denver and Rio Grande connected Denver, Colorado Springs and Santa Fe. The Southern Pacific came through El Paso to the Coast in 1880. Railroads all advertised the ease and comfort with which invalids could reach the most healthful climates. The 1881 journey of Dr. Lawrence F. Flick of Pennsylvania, after the first relapse of his own pulmonary tuberculosis, illustrates the route which many others took. He left Philadelphia that summer after only a year of medical practice. He *inquired* his way gradually westward and by November had reached western Kansas. There he was advised against the danger of getting mountain fever in Colorado, and so cut the corner of that state to continue by the new railroad to Santa Fe over the Raton Pass. Later he wrote about New Mexico[7]: "I found it a proper place—not for a man in bad health and of any refinement—but for vagabonds and ruffians." He left Santa Fe after a very short stay at the Palace Hotel at an extravagant $4.00 per day, and proceeded down the line to El Paso, "where there is an excellent climate but too much dust, and too little to eat." Moving on to Arizona, he found Tucson another place in which it was hard to live. Eventually he spent the winter packing oranges in Los Angeles before returning home by the more northern transcontinental route, a convinced advocate of treatment nearer home and later the founder of at least five sanatoria there.

Dr. Henry Sewall came west to practice in Denver and liked to say in his later years: "Saranac Lake saved my life; Colorado prolonged it." Dr. James J. Waring, after healing his own lungs, could not safely return to the East, so remained in Denver to become a Professor of Medicine and well beloved mentor to all chest men in that area. Dr. Gerald



Webb, an Englishman, became the medical leader in Colorado Springs. He said: "It remained for physiologists of our generation to show that the time-honored remedy of climate was not entirely without a scientific foundation."[8] Alfred Cowles and E. N. Chapman had shown in 1934 that a climate with high altitude, dry air and much sunshine was secondary only to sociologic factors in affecting tuberculosis; and even in the fourth decade of this century 86 per cent of cases of tuberculosis in Colorado were originated outside of that state.[9]

In and around Denver the pressure of tuberculous patients, built up toward the end of the nineteenth century, finally forced the establishment of a series of eleemosynary institutions for their care. Between 1899 and 1909, in chronologic order, there were founded the National Jewish Hospital for Consumptives, Foxhall Cottage, the Association's Health Farm (Y.M.C.A.), Emma Booth Tucker Memorial Sanitarium for Consumptives (Salvation Army), Jewish Consumptives' Relief Society Sanitarium, Agnes Memorial Sanatorium, County Farm, Tuberculosis Pavilion, Lutheran Sanatorium, Rocky Mountain Industrial Sanatorium, Craig Colony, Modern Woodmen of America Sanatorium, Swedish National Sanatorium, and Ex-Patients' Tubercular Home. Private sanatoria were opened in Colorado Springs and other higher health resorts, such as Nordrach Ranch (1901), Resthaven, Sunrise Mountain Park, Cragmor Sanatorium, Colorado Sanatorium and Mesa Vista Sanatorium in Boulder.

In Santa Fe, the Sun Mount Tent Colony, later Sunmount Sanatorium, was the first private sanatorium. Southwestern Presbyterian in Albuquerque, founded in 1908, was the first of a number of tuberculosis sanatoria following St. Joseph's in that city. In the Mesilla Valley, around Las Cruces, N. M., a number of private sanatoria sprang up, as also around Las Vegas, N. M., such as Valmora Sanatorium (1904) and the Montezuma, built in 1905 by the A. T. & S. F. RR.

Conclusion

By the end of the Great Depression in the 1930s the heyday of private sanatoria in the high country was over. Every state in the East and Midwest had built free sanatoria to provide good treatment for citizens with tuberculosis. Lung collapse, surgery, and finally chemotherapy prevailed, more effective than climate. The "Sunshine Clubs" and other promotional organizations in the West reduced their advertising budgets. The children of the original "lungers," who had provided our western cities and states with intelligent, educated leaders, were now themselves adults blessed with good health to which the climate and outdoor life had contributed. Uranium became sought rather than gold. Fallout from atomic testing and air pollution from hydrocarbons had become more important factors medically than the terpenes released by pine trees. Health was pursued with the assistance of pills rather than of hills. The great faith in climatotherapy, its study and application, was transferred to elaborate tests of pulmonary function. An era was over. •

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Delayed enteric-coated potassium ulcerative obstruction of small intestine

Col. John Withers; Capt. James Cooper, MC, U.S.A.,* and A. M. Rosen, MD, Taos, New Mexico

A POTASSIUM INDUCED intestinal obstruction developed two years after discontinuing medication:

CASE REPORT

The patient in this report is one of the reporters (A. M. R.), a 52-year-old physician, who in 1962 sustained a major antero-septal coronary infarct. Because of a mild post-coronary myocardial failure, patient was placed on HydroDIURIL-Ka-50, one daily for over two years. In December 1964, he began noticing cramp-like mid-abdominal pain about four to six hours after major meals. Because of the reports which were then appearing in the literature associating enteric-coated potassium medication with small intestinal inflammation, ulceration, and stenosis, a small intestinal series was done. It revealed a single dilated loop of jejunum but no definite radiologic evidence of stenosis. Potassium was eliminated from the therapy and he continued on plain chlorthiazides.

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Note: Reprint requests to Dr. A. M. Rosen, P. O. Box 728, Taos, New Mexico.

In September, 1966, while in flight to Saigon, he developed severe mid-abdominal cramps, nausea, and vomiting. He was admitted to the 17th Field Hospital in Saigon, where x-rays revealed severe jejunal obstruction. An emergency laparotomy was performed. In the distal jejunum a stenotic, obstructive lesion was found. This area of jejunum was resected and an end-to-end jejunojejunostomy was performed. The pathologic report stated that there was ulceration with fibrosis and stenosis of the specimen, non-specific in nature. A small intestinal series done one month postoperatively was negative.

This case is reported to add to the accumulating literature of presumed potassium-induced intestinal obstruction and because a period of two years elapsed between discontinuing the potassium and the development of sufficient stenosis to produce obstruction. More of these cases are showing up in the literature despite the general decrease in the use of enteric-coated potassium. •

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Toxic epidermal necrolysis in an infant*

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A case report of a rare syndrome with emphasis upon management and differential diagnosis.

TOXIC EPIDERMAL NECROLYSIS, sometimes referred to as the "scalded skin syndrome," was first recognized in 1956 by Lang and Walker[1] under the heading, "An Unusual Bullous Eruption," and by Lyell,[2] who suggested the accepted term, toxic epidermal necrolysis. Perhaps the term "toxic" is unfortunate since there is a relative absence of toxemia; a much more useful and simpler adjective would be "acute."

As of 1964, there were 46 cases reported in the world literature,[4] 24 of these were children and there was an over-all mortality rate of 30 per cent. The prognosis varied with the age of the patient and the extent of skin involved. Because of the frequent association of the syndrome with prior exposure to medication, it is theorized that the reaction is probably a toxic or allergic response with the skin and mucous membranes being the target organs.

The syndrome is described[3] as beginning with a prodrome of malaise, irritability, pyrexia, nausea, vomiting, diarrhea, albuminuria and acute tenderness of the skin. This is followed by erythema, beginning in the skin-fold areas and rapidly becoming generalized, but sparing the hairy areas. Then suddenly, within twelve hours after appearance of erythema, flaccid bullae develop, which along with a positive Nikolsky's phenomenon, result in denudation of the epidermis. The mucous membranes involved include the cornea, conjunctivae, mouth, pharynx, trachea, esophagus, bronchial tree and vagina.

Pathology is the same as that of a second degree burn with necrosis of the epidermis and separation of the epidermis from the normal-appearing dermis.

There may be spontaneous remissions or death may occur from five to eight days after onset. Therapy includes broad spectrum antibiotics and systemic corticosteroids in relatively high doses. Such regimens have resulted in rapid healing of the skin in most cases. There are apparently no sequelae in such cases, and most cases have been of a singular nature. Recurrence is possible, but very rare. Prognosis depends on two factors, the age of the patient and the extent of the skin involved. Rate of skin healing is most remarkable. Apparently the whole skin can regenerate and return to a state of normal within only a few days.

CASE REPORT

D. B., a 13-month-old, white, male infant was born at Bataan Memorial Methodist Hospital of an uncomplicated pregnancy and delivery, and was discharged home on the fourth day. He had been followed for well-child care in the office and had progressed satisfactorily. The only history of significance was that he exhibited a fine pustular rash of the face, interpreted to be miliaria on several occasions during his first year of life. On one occasion, at the age of three months, there was a perineal rash which cleared subsequently with A and D Ointment. The child received his DPT and oral polio immunizations at 6 weeks, 3 months and 4 months; smallpox vaccination at 7 months; and measles vaccination at the age of 9 months. There had been some spitting up of foods from the age of 2 to 7 months. His first

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tooth came in at 6½ months with considerable drooling; at 9 months there was an eczematoid-like rash on both cheeks.

The child was not seen again until 13 months of age when, with a rather sudden onset, the mother noted a redness around the eyes and mouth on arising, two days prior to his hospitalization. This had spread by the afternoon, covering the entire face, accompanied by swelling around the eyes. There was exquisite tenderness under the arms. He was seen at home with a diagnosis of toxic erythema of questionable etiology. The child had been on Tempra Syrup for a low-grade temperature. Starch baths were prescribed for the itching together with Periactin, ½ teaspoon, four times daily. The following day the rash covered the entire chest, back and abdomen, inguinal and axillary areas. The child was exquisitely sensitive and began to blister and peel under the arms, on the back, in the diaper area and on the face. He had been unable to sleep for two nights. Aristocort Syrup, orally, and Cortisporin lotion, locally, and phenobarbitol were prescribed.

Thirty-eight hours after this rather sudden onset, the child was brought to the emergency room at Bataan Hospital, and from there admitted to the pediatric service. Physical findings on admission were temperature 100, pulse 140, respiration 40. The patient was in acute distress from his painful rash. There was an erythema present generally over the entire body, save the legs, with blisters over the same area (Fig. 1). The child was in severe distress because of the painful erythema in these larger than palm-sized patches, involving most of the body surface with the exception of the scalp. There were several large 5 to 10 cm. denuded areas and clear flaccid bullae which ruptured on application of the slightest pressure. Aside from extreme tenderness of the skin, the erythematous epidermis when touched could be wiped off like wet tissue paper. The entire picture resembled that of a second degree burn produced by scalding. There was also a mucopurulent discharge from the nose.

The white count on admission was 9,200 with 46 per cent polymorphonuclears, 45 lymphocytes, 7 monocytes, 2 eosinophiles; sedimentation rate was 21. Four days following admission the white count rose to 14,400 with 42 per cent polymorphonuclears, 54 lymphocytes, and 2 basophiles. Two days later the white count was down to 6,500 with a normal differential. Urine was clear, c-reactive protein was negative; throat culture showed coagulase positive staphylococcus and proteus mirabilis; culture of one of the weeping

Fig. 1. Appearance of the patient on second hospital day.

a. Large denuded areas over trunk, arms and face.

b. Ruptured bullae on forehead, face, etc., with peri-orbital and peri-oral swelling and lesions.

areas showed a colony of proteus and coagulase positive staphylococcus of two different varieties. All organisms were resistant to penicillin, tetracycline and streptomycin, but sensitive to other antibiotics. Total protein was 6.3 grams, gamma globulin, 7.2 per cent of total; x-ray of the chest was normal on two occasions.

The patient was placed in isolation, with strict aseptic technic, and treated as a second degree burn, handling the skin as little as possible. Kenalog spray was applied locally to the affected areas several times a day during the first two days of hospitalization, then replaced by Cortisporin lotion. Cortisporin ophthalmic ointment was applied to the skin around both eyes. Although the eye showed swelling of the eyelids there was no external ocular disease. The fundi were not well visualized. The child was placed on tetracycline, 250 mg. every 6 hours by mouth. This was subsequently replaced by Unipen, when it was found that the organisms were not responsive to the tetracycline. Vistaril was added for restlessness. The child developed some loose stools and Donnagel was added to the therapy. The child was observed carefully over the next seven days for possible development of corneal ulcer.

There was rapid improvement of the skin over the period of a week (Fig. 2) and the child was discharged home on the 8th hospital day. He has been followed now for some eight months. He was maintained on Aristocort, Unipen and Vistaril orally for about two weeks after discharge, with special skin care. He had some peeling of the feet, the scalp, etc. The remainder of his skin recovered completely without any sequelae.

Fig. 2. Appearance of the patient on ninth hospital day.

a. Peeling of hands, healing of trunk, knees and thighs.

Discussion

The mother of this child was in the habit of treating him with medications containing acetaminophen whenever the child had a slight fever. This medication had been administered prior to the onset of the dermatological crisis. The week prior to admission, the family had moved into a new house which was freshly painted. The child had received a new set of cotton clothes, which he wore for the first time about one week prior to admission. He had partaken of some orange pudding for the first time four days prior to admission. His mother had started washing his clothes in a concentrated detergent which she had never before used. The child had been crawling on the floor and coming into contact with a set of metallic drapes, which had been in the house and had been

b. Healed face without any skin or eye residue.

recently returned from a cleaner. No other significant past history was available of any contact with allergens.

This condition may be confused with Ritter's disease, which is an acute bacterial infection in the neo-natal period, and may occur with outbreaks of neo-natal pemphigus or bullous impetigo. In acute toxic epidermal necrolysis, however, there is no general toxemia, let alone septicemia. It is to be concluded therefore, that the condition under discussion is not Ritter's disease, although the skin damage is of the same kind. It is also distinct from the Stevens-Johnson syndrome or ectodermosis erosiva pluriorficialis, since there is a universal distribution of the eruption without any of the lesions of erythema multiformi. Lesions of the mucous membranes are invariably mild and inconstant in toxic epidermal necrolysis, but form a prominent feature of the Stevens-Johnson syndrome. Blindness does not occur and no sequelae occur except occasional scarring. Drug sensitivity is first to be considered. Those drugs that are more commonly implicated are penicillin, sulfonamides, phenalbutazone, phenolpthalin and antipyrine.

We believe that the history of sudden onset of erythema of the skin beginning around the eyes and mouth, progressing rapidly to involve most of the body surface within 48 hours, associated with exquisite tenderness of the involved skin, with a positive Nikolsky sign, together with the rapid recovery of this child, without sequelae, is indeed indicative of toxic epidermal necrolysis. We think that the culture of coagulase positive staphylococcus, cultured from the skin surface was probably contaminant as there was no clinical evidence of pyodermia. •

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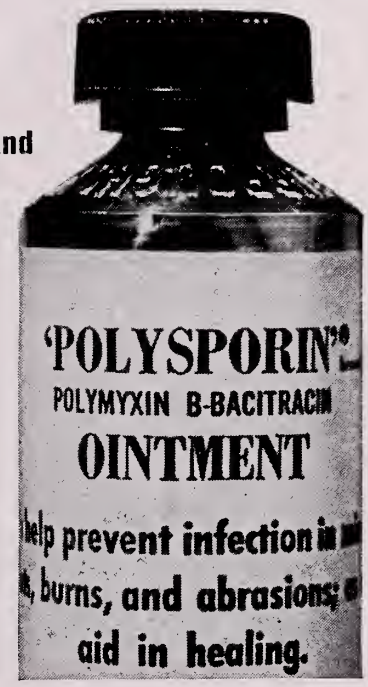

Metastatic epidermoid carcinoma in the pre-parotid lymph nodes

J. W. Grossman, MD, and David Hedrick, MD*, Albuquerque, New Mexico

A mass in the parotid region is not always in the parotid gland. Two cases are reported, in which the masses were metastases from carcinoma of the skin.

THERE IS A GROUP of small lymph nodes in the subcutaneous tissues over the parotid gland which drain the root of the nose, the eyelids, the forehead, the anterior part of the scalp and the lateral aspect of the external ear. The efferent lymphatic vessels of these lymph nodes (hereafter referred to as the P.P.L.N. pre-parotid lymph nodes) pass to the superior deep cervical nodes. Metastases to the P.P.L.N. from epidermoid carcinoma of the skin in areas drained by them may clinically simulate a primary tumor of the parotid gland, and histologically raise the question of the more hazardous primary epidermoid carcinoma of the gland. Though both tumors are not often seen and the primary variety is even less frequently encountered, their differentiation can be important in guiding therapy. This point deserves emphasis and the purpose of this paper is to call attention to the nature of the problem by reporting two cases in which the "parotid" mass proved to be metastases of epidermoid carcinoma of the skin to the P.P.L.N. and not a primary tumor of the gland.

CASE REPORTS

Case 1: A 75-year-old female was referred for consideration of further treatment following incomplete excision of a mass in the right parotid area. The mass had been present and enlarging for several months prior to excision. A right facial paralysis had resulted from the surgery. There were no enlarged cervical lymph nodes palpable.

Microscopic examination of the excised tissue revealed parotid gland with squamous cell carcinoma grade III, thought most likely to be metastatic rather than a primary tumor of the parotid gland. On close questioning of the patient, a history of excision and radiation therapy of a skin tumor of the right supraorbital region two years previously was obtained (Fig. 1). A faint scar

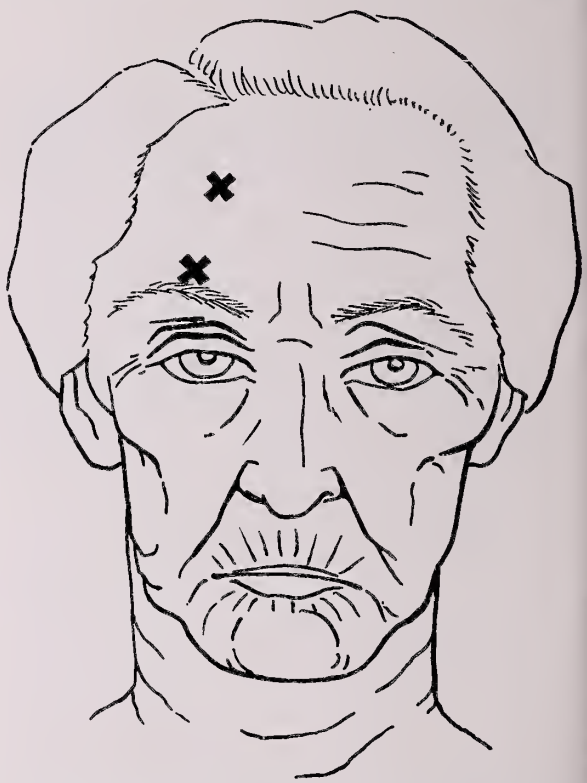

Fig. 1. Diagram showing the location of the primary epidermoid cancers of the skin in the cases being reported. In Case 1, the lesion was in the skin of the right eyebrow. In Case 2, the lesion was in the skin of the forehead, to the right of the midline.

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was visible in this area, but no recurrence could be seen or palpated. It was learned from the patient's previous physician that this skin tumor was an invasive epidermoid carcinoma.

The right parotid area was treated with x-ray. The patient remained free of evidence of recurrence or metastases for four and one-half years, at the end of which time she died of other causes.

Case 2: A 79-year-old female was referred for diagnosis and treatment of a hard swelling in the right parotid gland of one month's duration. It measured 2½ x 3½ cm and was located in the upper pole of the gland. No enlarged cervical lymph nodes were palpable. The referring physician's records revealed that one year previously an epidermoid carcinoma, grade III, of the skin of the forehead on the right side had been completely excised (Fig. 1). There was no gross evidence of local recurrence. Based on experience with a previous case, a clinical diagnosis off metastatic epidermoid carcinoma to the P.P.L.N. was made. This was confirmed by biopsy (Fig. 2).

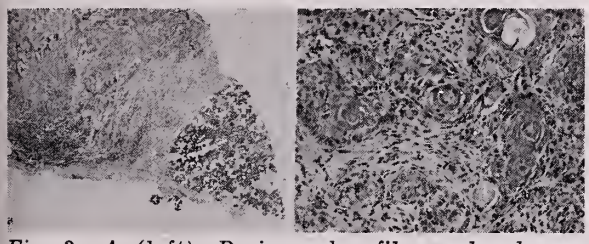

Fig. 2. A (left): Pericapsular fibrous band separates the metastases from the salivary gland which is in the left lower quadrant of the photograph (Magnification x 26)

B (right): Metastatic epidermoid carcinoma includes keratohyalin in the centers of the tumor nests. Tumor is interspersed with desmoplastic fibrous stroma. (Magnification x 205)

The neoplastic tissue was firmly adherent to the parotid gland. It was felt that an attempt at radical removal was not warranted because of the patient's age, general condition, and the possibility of producing a facial paralysis. The patient was treated with radiation therapy and when seen three months after completion of therapy, there was no apparent tumor in the parotid area. A depression was palpable in the region of the previous tumor.

Discussion

When a mass is found in the parotid area, the first impression, based on statistics, should be a primary tumor of the parotid gland. When histological examination of tissue from such a tumor is made, and epidermoid carcinoma is found, one must, if possible, determine whether this is a primary epidermoid carcinoma of the parotid gland or whether it is a metastatic epidermoid carcinoma to the P.P.L.N. from a primary skin cancer. To do so allows a more informed approach to therapy.

Primary epidermoid carcinoma of the parotid gland is one of the less common parotid tumors. State and Gage,[1] in reviewing a series of 243 cases of primary parotid tumors both benign and malignant, found primary squamous cell carcinoma in 13 of the 77 instances of malignancy in the series, an incidence of 16.9 per cent. This is higher than generally recorded in the literature. Beehrs, Woolman, Carveth and Devine[2] reported an incidence of 3 per cent for primary epidermoid carcinomas in a series of 162 malignant tumors of the parotid gland. In the same group they noted seven cases (4.3 per cent) of metastatic epidermoid carcinoma of the parotid, an incidence somewhat higher than the primary variety. Foote and Frazell[3] in their monograph recorded 26 cases of primary squamous cell carcinoma of the parotid gland in a series of 261 malignant parotid tumors, an incidence of about 10 per cent.

It is postulated by Foote and Frazell that primary epidermoid carcinoma of the parotid gland arises from the duct epithelium which has the ability to undergo squamous metaplasia. It is unknown whether epidermoid carcinomas of the parotid gland are from the outset purely unicellular tumors or whether they represent diffuse squamous cell overgrowths of tumors that were fundamentally muco-epidermoid in the beginning.

Epidermoid carcinoma of the skin in the areas drained by the P.P.L.N. is common especially in the Southwest because of climatic conditions. In the initial examination and in the follow-up after treatment of epidermoid carcinoma of the skin of these areas, the parotid regions should be carefully examined for metastases in the P.P.L.N. When epidermoid carcinoma of the parotid gland is diagnosed, particularly since the primary variety is rare and the choice of therapy may be different, it is important to determine whether the patient has or has had an epidermoid carcinoma of the skin drained by the P.P.L.N.

Graham[4] has written an excellent paper calling attention to metastatic cancer in the

P.P.L.N., especially in melanoma of the skin, but also in epidermoid cancer. He has studied the distribution of the P.P.L.N. and discusses the surgical treatment of metastases to these nodes.

Primary epidermoid carcinoma of the parotid gland is a widely infiltrating tumor and its treatment by radical surgery often results in sacrifice of the facial nerve. Metastatic epidermoid carcinoma to the P.P.L.N. is best treated surgically, but the facial nerve can often be preserved totally or in part.

Summary

Tumors of the exposed skin are common in the Southwest. Among them are epidermoid carcinomas of areas drained by afferent vessels of the pre-parotid lymph nodes (P.P.L.N.); viz., root of the nose, eyelids, forehead, anterior scalp and lateral aspect of the internal ear. Some of these metastasize to the P.P.L.N. Clinically they may stimulate the rare primary epidermoid carcinomas of the parotid gland. Two such cases were described to emphasize first the need for periodic and careful examination of the parotid areas following treatment of malignant lesions of the upper anterior portions of the face and head, and second, the desirability of an accurate differential diagnosis to guide therapy. •

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We were proud of the recent Montana issue of our *Journal.* Its distinctive cover was particularly unique, and it has created a great deal of discussion and many comments. Among them are the following:

"The *Journal* is to be congratulated for its excellent taste."—**New Mexico**

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The cover of the *Rocky Mountain Medical Journal* for May is an absolute delight."—**Nevada**

"I am certainly delighted with the Montana issue of the *Rocky Mountain Medical Journal.* The color photograph turned out extremely well."—**Montana**

Further favorable acceptance was indicated by orders for copies of the picture. Many orders have been received and promptly filled. It is not too late for you to be supplied with copies of the famous Russell painting. You might have another look at the May issue and decide whether you would like to possess a copy. The different types and prices are mentioned in the editorial pages of the May issue.

Narcotics in the college environment

A. Kenneth Young, MD, Albuquerque, New Mexico

There is nothing new in the use of drugs except the publicity given it today.

COLLEGE HAS BEEN DEFINED as the Fountain of Knowledge where all go to drink! With the recent tremendous increase in enrollments and the burgeoning of the multiversity with its lack of individual identity, this unfortunately seems to be becoming more factual than facetious.

That there has been a re-emphasis on *Education* in college is most salutary, though it may not necessarily prove effective. One wonders if this re-emphasis is responsible for the action taken by one midwestern university which has ruled that "No athlete shall be awarded a letter unless he can tell at a glance which letter it is."

Whether or not the increased numbers of students on our campuses represent a true search for education, or merely a conformity to false social and cultural standards, the development of such large aggregations of young people, with less and less individual control, has brought in its wake a train of behavioral problems; alcohol, sex and the "new freedoms," which in our 3D world might be called *d*ress, *d*rugs, and *d*eviation. Just how *new* are these? Dress, as we all know, has been copying the pendulum in its swing from one extreme to the other throughout the ages, the topless bosomy beauties at the courts of the middle ages and the topless waitresses and go-go girls of today. The lengthy curls of King Charles I are not altogether absent in segments of our society today.

Deviates, too, are mentioned in biblical times and crop up throughout the ages, particularly in the world of art and letters. It is with drugs that we seem to be most concerned today, particularly the *new* ones, LSD and marijuana. Are they really so *new*, these drugs and their advocates, the so-called NEW THINKERS? Frank Moore Colby, the American essayist who died in 1925, defined a NEW THINKER as one who "when studied closely is merely a man who does not know what other people have thought."

Let us look, then, at narcotics in this light and see how *new* is their use for obtaining "kicks."

Broadly speaking these drugs, or narcotics, fall into only a few families:

Alcohol, in its many forms.

Opium — with morphia and heroin — the poppy.

Cannabis or Indian hemp, known also as hashish, bhang, marijuana.

The cocaines—or the coca bean family.

Worthy of mention, also, are some of the more esoteric herbal narcotics, including the legendary mandragora and the mysterious nepenthe, which latter was probably either opium or marijuana in one form or another.

To quote Shakespeare:

> Nor Poppy nor Mandragora
> Nor all the drowsy syrups of the world
> Can ever medecine thee to that sweet sleep
> Which thou owedst yesterday.
>
> (Iago in Othello, Act III, Scene 3.)

Plutarch incidentally mentions mandragora—or mandrake—in telling of the hardships that beset Antony's army in the war against the Parthians. The troops in starvation partook of the mandrake and it produced madness, then death. It caused also loss of memory—men were observed "stooping to the ground and overturning every stone as if that task were of greatest importance."

The *newer* and notorious hallucinogenic or psychedelic drugs we shall come to later.

From time immemorial these older substances have been used in the Orient and other parts of the world—often in the first place as legitimate medicines, but invariably also illegally as drugs affecting the senses, producing mood changes, elation, or hallucinations.

Anesthesia, which is not essentially a modern discovery at all, was practiced by the ancient Egyptians in surgical procedures which are documented in manuscripts inscribed almost 5000 years ago.

Incidentally, there is a popular misconception that the Egyptians were among the first brain surgeons because instruments for opening the skull by trephining have been discovered in early tombs along with skulls that had clearly been opened in this manner. Though done in the guise of healing, evidence has shown that this operation was performed on the insane and upon political enemies in order to "let out the evil spirits" which apparently it did most successfully as many of the skull openings failed to show any evidence of a healing process! The Egyptians, however, did carry out many legitimate surgical procedures and, for anesthesia, rendered the patient insensible with considerable quantities of fermented potions. On the other side of the coin, habitual drunkenness was also known.

Ancient use of opium

In 3000 B.C. HwaTo in China (Han Dynasty) discovered a narcotic which, dissolved in wine, rendered the subject unconscious and produced languorous dreams. Though never described fully, it was probably an opium preparation. Undoubtedly, about this time opium came into use as a tranquilizing and hallucinogenic narcotic in China.

Homer, in 700 B.C., praised nepenthe for its soothing qualities and in The Odyssey it is nepenthe which Helen gave to Telemachus to make him forget his sorrows. It is almost certain that the myterious nepenthe was either opium or hashish masquerading under a new name—perhaps in an attempt, even then, to give it respectability.

However, you think, this is well known; everyone knows that opium has been a traditional drug from way back when. What about marijuana and LSD, apparently the two major concerns of today, and what about cocaine or "snow" — beloved of Sherlock Holmes in his periods of brilliant deduction and meditation? Cocaine was discovered in the mid-1800's by Maclagen, but for countless centuries the Peruvian Indians had used it—chewing the coca leaves to stave off hunger pangs and develop euphoria and false energy on long journeys. It really is no newer probably than opium.

Hashish

All right then—but what about marijuana or "pot"? Marijuana is a preparation of the leaves and flowers of Cannabis Indica, or Indian Hemp, known in various parts of the world as hashish, bhang, kif, etc. One of the first descriptions of pot (or hashish) and its effects is in the Chinese Book of Herbs, the RHYA in 1200 B.C.

In the 7th century B.C., the Assyrians smoked pot in the form of hashish and ate both the hemp leaves and resinous cakes of the extract. It is interesting to speculate that when Nebuchadnezzar in 652 B.C. crawled around in madness eating grass, he was possibly eating marijuana leaves. To quote Daniel 4 and 34, "At the end of the days (of eating grass) I, Nebuchadnezzar, lifted up mine eyes to Heaven and mine understanding returned to me." It should be noted, for a modern touch, that he was quite the present day picture: Verse 33 says, "His hairs were grown like eagle's feathers and his nails like bird's claws." Beats of today—take note!

In 500 B.C. Herodotus in his "Histories" described the deliriant action of marijuana.

These references quoted so far were not regarding the use of cannabis for medication. One of the first recorded applications in this field was in 230 B.C. in the WEI Dynasty in China when Haotho gave ma-yo (a preparation of hemp-marijuana) to render people insensible to pain.

Among the more interesting of the ancient references to marijuana, it is recounted that in the year 1090 A.D. there existed a secret order of Moslems under Hasan Sabah who roamed the mountains of Asia. These brigands ruthlessly murdered all and sundry who crossed their paths. They were hashish

eaters and smokers and known to the Arabs as Hashishin—this is the derivation of the English word "assassin." Marco Polo, some 200 years later, fell in with a gang of these Hashishins, led at that time by one known as "The Old Man of the Mountains," and overcame him by getting him intoxicated with his own hashish.

It is obviously impossible, in a short summary, to recount even a fraction of the fascinating references throughout a period of thousands of years, sufficient to say that "pot" is possibly as old as time itself.

Hallucinogenic drugs

The present day form of marijuana—"reefers"—was first introduced to the U.S. in 1910 in New Orleans, and later recognized as a popular addiction in New York in 1921. Since then there has been an ebb and flow in the tide of its notoriety, brought recently into prominence by the spotlight which has been focused primarily on LSD—the newest in the field—or is it?

Popularly called a hallucinogenic drug, there is some confusion as to when it was first synthesized, some authorities claiming as early as 1922. Be that as it may, its hallucinogenic properties were not discovered until the 1940's. One of a group of drugs capable of producing varying degrees of hallucinations, it is related to mescaline which is not new, nor is its use for producing hallucinations new. Mescaline is the active alkaloid in the buttons of the peyote cactus. Long known to the Aztecs in Mexico for its medicinal properties, it produces effects similar to LSD, and because of this is a vital part of many North American Indian cultist religions from Oklahoma to Canada. Here, in New Mexico, Spanish documents of 1631 mention the use of peyote by Pueblo Indians in the Santa Fe area, and its use continues today in the practices of the "Native American Church" of the Navajo Indians.

Another plant used mystically by primitive Aztecs is the ololiuqui which when analyzed is closely similar to LSD.

What then *is* new in narcotics—largely the publicity, or at least the spread of the publicity. It is certainly not the actual recorded descriptions of the effects of such drugs.

Theophile Gautier in 1843 describes his own sensations under the effects of hashish or marijuana: "Thousands of millions of butterflies, their wings rustling like fans, swarmed about me in a faintly luminous atmosphere" . . . "I was swimming in a sea of sound in which motifs from the Barber of Seville floated like islands of light. I heard the sounds of colors, and if I spoke, the sound reverberated in my head like thunder. I dared not speak for fear of making myself explode like a bomb, and my body became transparent so that I could see the hashish in my belly glowing like an emerald."

The erotic aspects of the drug were painted vividly by Alexandre Dumas in the Count of Monte Cristo: "Lips of stone turning to flame . . . breasts of ice becoming like heated lava . . . the man sinking back breathless and exhausted beneath the kisses of these marble goddesses."

The reputed aphrodisiac action of marijuana has always appealed to the popular imagination, Orientals and the early addicts in New Orleans employing it mainly for the purpose of prolonging coitus.

That this erotic euphoria is by no means a constant effect of the drugs is now known, producing as it does, in many users, a miasma of horror combined with a peculiarly detached euphoria. As long ago as 1884 the anonymous author of "Confessions of an English Hashish Eater" wrote that life appeared to be a grand joke and the mere delight of existence made him laugh boisterously. At one stage, attempting to thrust his hand through his hair, "My fingers passed through my crackling skull into my warm cheesy brain."

Publicity and drugs

So we see that in marijuana and opium there is nothing new, even LSD is only a modern synthesis of the ancient mescaline-peyote group of drugs. Publicity of a kind has always given them prominence as we have shown, but, in older times, a prominence that was rather limited in scope and area. Unfortunately the esoteric drugs appealed to a limited number of intellectuals. In the 18th and 19th Centuries among famous, and, in their day, vocal users were Theophile Gautier,

French poet and writer of macabre tales; Charles Baudelaire, one of the first of the so-called "decadents"; Gerard DeNerval; Charles Lamb, the essayist; Edgar Allen Poe, Oscar Wilde, and many others among whom the best known is probably Thomas DeQuincy who in 1882 wrote "Confessions of an English Opium Eater," describing the growth and effects of his drug habit.

All these had their effects in stimulating outbursts of drug experimentation confined largely to the so-called intellectuals of their time. Unfortunately today not only do we have a fantastic increase in mass communications media, including a press which has sensationalism for its very life blood, but there is also a tremendous upsurge in what must be called pseudo-intellectualism — the New Thinkers who, apparently unaware that all this has been thought about long before, do not realize that the new horizons they are seeking to explore are already littered with the ugly debris and moral garbage of generations gone long since.

There is nothing new under the sun—even the fads which hang on the fringe of drug addiction—substitutes such as morning glory seeds, nutmeg and even banana skins—the most recent.

Two thousand years B.C., the Chinese recorded that rhododendron infusions were used for their effects as an opium substitute to produce languorous dreams, along with jasmin leaves and the mysterious mandrake or mandragora, which is a legend in itself and one that persisted throughout the middle ages.

Escape from reality

There are always those who will experiment—particularly in the face of danger and in defiance of saner experience, those who will seize folly by its forelock in the forelorn chance of gaining a notoriety which they could not otherwise achieve. In their simplest expression these activities take the form of pie-eating contests, goldfish swallowing, and phone-booth cramming. These eccentricities, harmless as they are in themselves, are sufficiently novel that they are publicized from coast to coast and immediately duplicated within weeks all over the country, only to die out again as quickly.

The publicity gained by marijuana and LSD has been similar, both in its inception and its effects, but will it die in like fashion? Fed by continuing publicity it will continue to grow and to spread. Unfortunately too, unlike the other examples, it will endanger and may, in some cases, destroy the participants, continuing as a habit with some, even should the general pattern die out.

Much talk has been made about the addictiveness or otherwise of LSD and marijuana; addiction being popularly defined as the development through usage of a physical dependence on the drug and a consequent physiological need for it. LSD and marijuana, it has been claimed, do not have this property, or effect. This seems to be entirely missing the point and failing to recognize the interdependence of mind and body. Supposing the advocates of these drugs state that they do not produce true addiction, i.e., in the physical sense; nonetheless they do produce a mental addiction, in that the individual likes the sensations produced and enjoys the apparent widening of his perceptions and the tranquilization of his anxieties. In time he comes to depend on these drugs for the escape from reality which they provide, and the false assurance of his own superiority which they engender.

Education in dangers of drug usage

As a Canadian psychiatrist put it recently, while some drugs such as heroin addict *you,* with LSD you addict yourself. This also is true to an extent with marijuana, though being of the hemp family it cannot be considered a drug which has *no* addictive qualities.

This then states the problem as it stands today—what of the solution?

On a well-known southern college, overt necking had become something of a problem. The dean of women therefore, addressing her students, began by saying, "The President and I have decided to stop petting on campus!"

Obviously this approach—*a simple policy decision*—is not likely to be effective. A better approach is adequate education in the dangers of drugs — especially emphasizing that their use is nothing new, therefore nothing to appeal to the avante garde. Another,

and possibly the most important—and maybe the most unattainable—is the control of publicity and the avoidance of sensationalism. The user, in his own set, gains stature when he brags about his habit and his experiences and becomes in its eyes a hero if he is publicized or convicted. By and large, these are immature persons seeking an easy escape from the knowledge of their own immaturity. Surely such a thing as immaturity is not deserving of nationwide or even local publicity.

Where *users* are discovered, they should be treated with understanding for their immaturity, pity for their folly and discipline for their moral delinquency, tempered with a measure of ridicule for their conceit. Where *pushers* are discovered, they should be treated with the harshest means that the law can devise, they are predators and parasites at one and the same time, preying on the weakness of their fellow human beings and contributing nothing but evil to their environment. They cannot be dealt with with understanding or tolerance, because these qualities are something that they have deliberately divorced themselves from.

These people are criminals and cannot be excused, as can some of the others who constitute the Beat Generation. The Beat Generation has been explained in many ways, but the real clue to this *new* problem lies in an *old* quotation.

"Watch what people are cynical about and one can often discover what they lack, and subconsciously, beneath their touchy condescension, deeply wish they had." This was the observation of Harry Emerson Fosdick.

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Urologic manifestations of abdominal aortic and iliac aneurysms*

Robert Friedenberg, MD, Albuquerque, New Mexico

Many patients with abdominal aneurysms present with urologic symptoms. An analysis of 27 cases.

OLIGURIA, DYSURIA AND ANURIA, along with pain in the flank, groin, and testicle, as well as pyuria and fever, have all been described in abdominal aortic and iliac aneurysms.[1,2] These findings are likely to be confused with manifestations of primary urologic disease because of failure to recognize their vascular basis.[3] Confusion is especially likely if pain is not a striking finding, or if an apparently asymptomatic pulsatile abdominal mass has been known to exist for some time without change in size or sensitivity. Moreover, with the increasing tendency among urologists not to delay surgery on the prostate until the development of residual urine of 2 oz. or more, it is especially important to be certain that obstructive uropathic symptoms do not have their origin in such aneurysms.

Of course there is some overlap of findings caused by both vascular and genitourinary system involvement, as in Wright's series of 102 abdominal aneurysms in which 22 patients had genitourinary complaints, including 7 with carcinoma of the bladder, 5 with nephrosclerosis, 3 with uremia, 2 with carcinoma of the prostate, and 3 with renal infarcts.[4]

Mechanism of urologic symptoms

The above mentioned symptoms are induced, especially in the non-fulminant cases of aneurysm which do not show gross massive rupture and early death, by perivascular leakage with consequent pressure on, and erosion of the vertebrae, and with production of intense inflammatory and fibrous reaction about the aneurysm into the retroperitoneal space, causing nerve root compression.[5] The pain may also be referred to the groin and thigh, especially in iliac aneurysm, by compression of the sacral plexus. Sensory, reflex, and atrophic changes, as a consequence of compression may also occur,[6,7] as demonstrated by our first case report, one of internal iliac aneurysm and thrombosis with slow perivascular leakage.

Although aortic abdominal aneurysms do not commonly cause ureteral obstruction because the ureter is fixed only at the renal pelvis and at the bladder, there is no doubt that any leakage of blood in the course of inducing an inflammatory and fibrous reaction may cause an obstructive uropathy.[8,9,10,11] Pressure on the bladder by the aneurysm itself, may so diminish bladder capacity as to cause frequency, dysuria, and pollakiuria.[6] Another cause of anuria or oliguria in ruptured aneurysm, not obstructive in origin, is renal tubular insufficiency secondary to decreased renal perfusion in patients who survive for a time despite shock and massive blood loss.[10]

Frequency of urologic symptoms

An analysis of the last 27 cases of abdominal aneurysm, admitted to St. Joseph and Presbyterian Hospitals, Albuquerque, New Mexico, revealed that 12 of these patients, or almost one in two, had urologic symptoms of pain, of variable degree, either costovertebral, flank, groin, suprapubic, or

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testicular, the latter always being on the left side. Also, these patients had at least one of the following symptoms; oliguria, dysuria, frequency and urgency (Table 1). There was only one iliac aneurysm, understandable in view of its infrequency, the incidence in one series having been one-tenth that of abdominal aneurysms.[12]

Female patients were on an average older than the males. Almost half the patients were females, a higher proportion than usually expected and possibly explained by their older age distribution. Significantly, however, only two females had urologic symptoms, suggesting that in males a differentiation from prostatic difficulties may be particularly troublesome.

In an assessment of the frequency with which urologic symptoms occur in the same general hospital population matched for age and sex with the 27 cases of aneurysm analyzed (Table 1), 84 patients were otherwise randomly selected from hospital admissions during the same time interval in which the 27 patients with aneurysm were hospitalized (Table 2). Fourteen patients had symptoms referable to the genitourinary tract, using the same criteria indicated above, showing an incidence of less than 1 in 5 patients in the general hospital group, as compared with 12 out of 27 aneurysm patients, or almost 1 in 2. More significant, all of the 14 patients in the control series carried genitourinary diagnoses to account for their symptoms. Thus, in effect, the control series simply reflected the incidence of urologic disease in a contemporaneous group matched for age and sex with a group of patients with proven abdominal aneurysm. Furthermore, the frequency of urologic symptoms, in the presence of such aneurysms, is more than twice the incidence of symptomatic urologic

TABLE 1

FREQUENCY OF URINARY SYMPTOMS IN ABDOMINAL ANEURYSM*

Age	*Sex*	*Diagnosis*	*Urologic Symptoms*	*Comments*
77	M	Carcinomatosis Abd. aneurysm	No	Incidental finding of aneurysm at surgery 9 mos. before death
80	F	Hypert. ASHD Ruptured Abd. aneurysm	No	Sudden pain in back and legs and death (P.M.)
79	M	Coronary AS Abd. aneurysm Uremia	?	Died probably in congestive heart failure (No P.M.)
70	M	Ruptured aortic abd. aneurysm	Yes	Death. Admitted as renal colic. (P.M.)
79	M	Prostatitis Epididmitis Abd. aneurysm	Yes	Prostate was stated to feel normal. Referred for aneurysmorrhaphy
84	F	Pneumonia Abd. aneurysm	No	Periodic abdominal pain and tenderness
58	M	Bleeding ulcer Abd. aneurysm	No	Diagnosis by physical examination
64	M	Abd. aneurysm Gastric ulcer (?)	No	Aortoiliac graft, disch. 18 d. after admission
66	M	Ruptured abd. aneurysm	No	BUN 20: Non-visual. of kidneys, aneu. by x-ray
60	M	Cerebral throm. and ant. spinal artery throm. after resection of abd. aneurysm	Yes	Aortoiliac graft 1959 and 1966 with left nephrectomy followed by thrombosis ant. spinal artery
76	M	Arterial embolism No lft. leg, abd. aneurysm	No	Aneurysm 10 cm in diam. by x-ray; prostatectomy 10 yrs. before
88	F	G.I. bleeding Abd. aneurysm at L2-L3	No	Small hiatus hernia, diverticulitis, x-ray evidence of aneurysm
61	F	Gall bladder disease	No	Abd. aneurysm at surgery
68	M	Ruptured abd. aneurysm	No	Aortogram done earlier, mass on lft, non-filling rt. renal artery
72	M	Intestinal obst. Adhesions Abd. aneurysm	No	Had prev. prostatectomy, death from pulmonary comp. 5 wks postop.
81	F	Abd. aortic aneurysm	No	Surgery with recovery. Aneurysm 3.5x5 cm
85	M	Abd. aortic aneurysm. AS obliterans, prev. stroke	Yes	Chills, fever and pyuria 12x7cm aneu. resected. Disch. 1½ wks postop.
75	F	Abd. aneurysm, cirrhosis, tumor of chest, diverticulitis	Yes	Non-function left kidney. No treatment
81	F	Perforated duodenal ulcer, cerebral hem., abd. aortic aneurysm	No	Death. Aneurysm unruptured
80	F	Chronic pyelonephritis, non-funct. lft. kidney, poor funct. right kidney, abd. aortic aneurysm	Yes	Radiologist thought renal arteries involved in aneurysm, on x-ray aneurysm meas. 9.5 x 12 cm.
57	M	Abd. aortic aneurysm	Yes	Knitted dacron bifurcation graft, disch. 7 d. postop.
69	M	ASHD, abd. aortic aneurysm	Yes	Prostatic hypertrophy present, death from CHF, aneu. unruptured (P.M.)
73	M	Case 2 See protocol	Yes	See protocol (P.M.)
52	M	Hypert. ASHD, old MI Abd. aortic aneurysm Possible peptic ulcer	Yes	Prev. history "prostate trouble," dacron bifurca-graft with recovery
74	M	Case 1 See protocol	Yes	See protocol (P.M.)
68	F	Abd. aortic aneurysm	No	Dacron graft inserted, aneurysm 6x5x4 cm. Disch. 10 d. postop.
65	M	Abd. aortic aneurysm	Yes	Transfemoral aortogram confirmatory, left ureter displaced laterally

*Urologic symptomatology consisting of (1) pain of variable degree, either costovertebral, flank, suprapubic, groin or testicular; (2) at least one of the following: oliguiria, dysuria, frequency, urgency, significant hematuria, pyuria.

TABLE 2

CAUSES OF UROLOGIC SYMPTOMATOLOGY* IN 14 PATIENTS OUT OF 84 MATCHED FOR AGE, SEX AND TIME PERIOD OF HOSPITAL ADMISSION, WITH PATIENTS HAVING ABDOMINAL ANEURYSMS.

Diagnosis	*Number of Cases*
Prostatic hypertrophy	5
Prostatitis	1
Prolapse uterus	1
Carcinoma prostate	2
Renal colic	2
Pyelitis, obstructive carcinomatosis	1
Carcinoma urinary bladder	1
Pyelonephritis	1

* criteria same as in Table 1.

disease in the otherwise comparable hospital population analyzed above.

The following cases are reported in detail to demonstrate major urologic symptoms as presenting complaints stemming from their aneurysms. In both cases the relatively small amount of residual bladder urine should have suggested that major obstructive uropathy was not prostatic.

CASE REPORTS

Case 1: A 74-year-old male was hospitalized because of dysuria, periodic incontinence, pain in the left knee, all of about 5 days duration, and inability to void for one day. The patient was known to have a left iliac aneurysm, rectal examination two years previously having revealed a rounded symmetrical, expansilely pulsatile mass about 5 cm. in diameter, lying against the left anterior surface of the sacrum near the midline. Because there had been a long standing history of severe hypertension, enlarged heart, coronary disease and atrial fibrillation, complicated by a macrocytic anemia following gastrectomy in 1952 for recurrent bleeding duodenal ulcer, it was felt unwise to subject him to elective surgery for the asymptomatic aneurysm. Antihypertensive regimen, including reserpine, pentolinium, chlorothiazide, and guanethidine, had maintained his blood pressure at averages of about 150/90 with occasional postural hypotensive episodes. Prior to therapy his blood pressure averaged 230/130. A satisfactory ventricular rate was maintained with digoxin.

Urologic examination shortly after admission revealed a small but unspecified residual volume, and confirmed the presence of the pulsating iliac aneurysm on rectal examination. The urinary symptoms were attributed to prostatic hypertrophy, and an indwelling catheter was inserted. Intravenous pyelography revealed slight interference with drainage of the left kidney and medial deviation of the distal left ureter. A needle biopsy of the middle lobe of the prostate was obtained.

Shortly thereafter, the patient developed paresis in the left lower extremity. Rectal examination revealed that the presacral mass was larger and no longer pulsated. It was firm but non-tender. Neurologic consultation indicated probable involvement of the sacral plexus on the left, because of almost total paralysis of the gluteal muscles, medial hamstrings, gastrocnemius, tibialis anterior, peroneus longus and long and short extensors of the toes, associated with loss of deep reflexes in the affected limb. Hypalgesia and hypesthesia were noted on the posterior thigh, calf and sole, the anterior half of the left leg and dorsum of the left foot.

Colon studies revealed a large circumscribed pelvic mass, presacral in location, with anterior and right lateral displacement of the rectum and rectosigmoid junction. A left percutaneous transfemoral retrograde arteriogram, performed and interpreted by Dr. M. B. Lesser, revealed this large pelvic mass to be strikingly avascular, producing elevation and displacement of the right hypogastric and compression of the left hypogastric arteries (Fig. 1).

Fig. 1. Left percutaneous transfemoral retrograde arteriogram, illustrating a strikingly avascular pelvic mass producing elevation and displacement of the right hypogastric and compression of the left hypogastric arteries.

On the basis of these findings, diagnosis of thrombosis of the left iliac artery aneurysm was made, and it appeared to be substantiated by needle biopsy of the mass which revealed organizing blood clot. Surgical opinion was that proximal

ligation of the thrombosed aneurysm was not indicated, and the patient was discharged from the hospital somewhat improved about two and a half weeks after entry. Motor function had improved in the left leg.

However, about 6 weeks later, he was readmitted to the hospital because of severe left lower quadrant and left lower extremity pain, and with exacerbation of his neurological findings. The rectal mass was less well delineated than formerly. Four days after admission a soft fluctuant swelling pointed in the left femoral triangle. This was incised and drained of more than 400 cm.^{3} of foul smelling maroon colored exudate from which was cultured E. Coli. The patient improved postoperatively, but suddenly expired the following day.

Post-mortem examination by Dr. G. A. Atkinson revealed the following pertinent features: The heart weighed 420 grams and showed left ventricular hypertrophy. The left coronary artery was stenosed to about 30 per cent of the normal luminal width by atherosclerotic plaques. Microscopic study revealed areas of very recent necrosis infiltrated by small numbers of neutrophils in the region of the interventricular septum. The iliac arteries were notably sclerotic and calcified. The left internal iliac artery aneurysm measured 3.5 cm by 4 cm. Distal to the aneurysm the vessel was completely occluded by dry old laminated clot, and a similar thrombus occluded the portion of the left internal iliac artery just proximal to the aneurysm. The lumen of the aneurysm was essentially empty, and its walls were formed by firm grayish white tissue without apparent disruption. Occurring around this site was a large amount of dry firm clotted blood forming a mass measuring about 7x6x5 cm. A large left retroperitoneal abscess cavity was entered as the left kidney was removed and was filled with 400-500 ml. of foul smelling yellowish-tan purulent fluid. The abcess extended from the left pelvic brim up to and behind the left kidney and involved the superficial portion of the iliopsoas muscle, posterior and lateral peritoneal wall, and apparently presented in the left femoral area at the site of the surgical incision. The abscess involved the femoral nerve also. Chronic inflammatory cell infiltration and fibroblastic proliferation occurred in and about nerve bundles, with other nerve bundles showing simply demyelinization without inflammatory features presumably on an ischaemic basis. The urinary bladder was intact and the prostate was only slightly enlarged.

Case 2: A 73-year-old man developed increasing urgency, strangury and inability to urinate, lower abdominal pain, and fever one day prior to admission. Since 1964 there had been some hesitancy in urinating when first arising. There was a past history of pulmonary tuberculosis contracted in World War I, and long since inactive. His parents died at advanced ages and there was a history of hypertension and stroke in his siblings. When examined in the emergency room, the patient was found to be normotensive. The vital signs were normal. There was suprapubic tenderness, but no masses were felt. Muscle guarding was noted over the lower abdomen. The prostate was symmetrical and moderately tender, and the lateral lobes were not significantly enlarged. Catheterization yielded 60 cc. of concentrated urine. An indwelling catheter was inserted and the patient was hospitalized. Urologic examination, including cystoscopy, indicated median bar enlargement as the most likely cause of his difficulty. An intravenous pyelogram (Fig. 2) revealed lateral displacement of the upper left ureter, indicative of a retroperitoneal mass, most likely an aneurysm, since a lateral film showed calcification in the posterior wall of the aorta, the anterior wall not being identifiable. Re-examination of the abdomen revealed left para-umbilical pulsation but no tenderness.

Fig. 2. Lateral displacement of the upper left ureter, indicative of a retroperitoneal mass, most likely an aneurysm, since a lateral film showed calcification in the posterior wall of the aorta.

Five days after admission on the night preceding his scheduled transurethral resection, the patient, being ambulatory, went to the nurses' station, complaining of apprehension. The nurse reassured him and told him to return to his room and that she would bring him a sedative. Within five minutes she found him in his bed in profound shock, pulseless, gray and sweating. Blood

pressure was unobtainable. Intravenous infusion containing levarterenol was ineffective and whole blood was administered rapidly with prompt but only transient restoration of blood pressure. An electrocardiograph revealed no acute infarctive process and continuous monitoring revealed a sinus tachycardia only. With the temporary improvement in his vital signs and sensorium he first began to complain of lower abdominal pain, exhibiting simultaneously, left lower quadrant and suprapubic tenderness. He died shortly thereafter.

Pertinent post-mortem findings revealed marked calcific atheromatous plaquing of the aorta with the aneurysmal portion measuring 12x7x7 cm., largely filled with laminated clot and presenting a perforation anteriorly just above the iliac bifurcation. The entire retroperitoneum on the left was filled with recently clotted blood which extended down into the left pelvis. There was no evidence of dissection. The apex of the right upper lobe of the lung was fibrotic and contained emphysematous blebs. The urinary bladder was unremarkable and the prostate gland was approximately twice normal size with a moderately prominent median bar.

Discussion

Urologic symptoms were first recognized in association with aortic aneurysms many years ago. One of Uhle's five cases simulated prostatic obstruction[13] and the mimicry of urologic disease by abdominal aneurysm has been repeatedly reported.[14] However, in a study of 102 cases published in 1950, no urologic signs or symptoms were mentioned,[15] and a later study of 141 cases revealed only 9 patients complaining of back and abdominal pain with no other symptoms more specifically relating to the urologic system.[16] However, it must be noted in this last series, that the diagnosis of aortic aneurysm was made by physical examination initially in only 73 of the 141 cases, and only one patient presented with the complaint of a pulsating abdominal mass, presumably attesting to the fact of early diagnosis in this series. In another study of 51 cases, dysuria, frequency and urgency were present in four patients, and there was sufficient distortion and compression of the right ureter to cause hydronephrosis in one case.[17]

We may learn several lessons from the two cases reported above. First, an unexpectedly small amount of residual urine in an elderly male with ostensible signs of obstructive uropathy, should alert one to the possibility

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of aneurysm. Secondly, severe abdominal pain may not herald the impending rupture, leakage or thrombosis in the region of an abdominal aortic or iliac aneurysm, but rather, distress of a nature more commonly associated with urologic disease may be present. This is especially so if, as in the case of iliac aneurysm, there are associated neurologic changes of reflex, sensory or atrophic nature. Further, the prostatic examination should include a 360 degree sweep with the volar aspect of the examining finger to determine the presence of a pulsatile mass or change in its character. Finally, a more aggressive approach than simply relying on presumptive spontaneous thrombosis of an iliac aneurysm must be considered for effective treatment. Indeed, John Abernethy, in 1796, was the first to attempt a cure by ligating the external iliac artery for aneurysm.[18] In retrospect, however, it is extremely unlikely that ligation would have effected any improvement in our first case, since the thrombosis existed proximal and distal to the aneurysm which was free of intraluminal clot but ensheathed in hematoma. Moreover, in this patient, the surgical risk was excessive, for an elective procedure, and it is conceivable that he may have survived following his incision and drainage were it not for the subsequent infarction in his interventricular septum and presumably fatal arrhythmia.

Although the number of cases of aneurysm in comparison with the general hospital control series studied above is insufficient to lend itself to a quantitatively significant statistical analysis, the preponderance of urologic findings in the male group with aneurysm suggests far more than prostatic or other primary uropathic overlapping.

One can envision that with computerization of well documented clinical findings in the future, the application of some of the ideas propounded by Feinstein, utilizing set theory and Venn diagrams, will reveal hitherto insufficiently appreciated correlations among taxonomically unrelated diseases.[19]

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Congenital rubella syndrome - -

*Report of a case presenting uncommon late manifestations**

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A case report illustrates growth failure, communication disorder, orthopedic problems and eye defects as a result of the congenital rubella syndrome.

A VARIETY OF BIRTH DEFECTS are recognized to be associated with the invasion of the fetus by the rubella virus during the first trimester of pregnancy. The difficulty in establishing the diagnosis as well as types of recognized defects are reviewed in the accompanying article. The 1963-1964 epidemic served to demonstrate the frequency of many of these findings of congenital rubella. Some of the significant defects, including deafness, eye abnormalities and retardation, are frequently unapparent at birth. Statistics on their frequency are not yet available from this epidemic.

Since the virus has been isolated from essentially all the body tissues in the embryo, a variety of defects is a real possibility. The following case serves to demonstrate the spectrum of involvement in the absence of the more typical neonatal picture and describes unusual aspects of communication disorders.

The findings previously recognized in communication disorders are sensorineural hearing loss of a fairly constant pattern with the greatest loss in the 500 to 4,000 decibel range. As many as fifty per cent of the earlier patients studied for deafness showed no other defects.[1,2] Further studies on current cases from the 1963-1964 epidemic are needed to clarify the frequency of this area of difficulty.

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CASE REPORT

This female patient was seen at the Bataan Hospital Rehabilitation Center Developmental Evaluation Clinic at 39 months of age because of history of multiple problems including lack of speech development, tight heel cords, head disproportion and slow growth. Mental retardation was considered.

The child was delivered from cephalic presentation January 30, 1963, two weeks prior to the expected date of confinement of a gravida VI, Para 1, 26-year-old mother who had had one term infant three years earlier. Prior to that pregnancy, she had had four spontaneous abortions, all at approximately six weeks gestation. No bleeding or cramping occurred during this pregnancy, but she had a two-day rash at approximately two months gestation. Birth weight of the child was 4 pounds 8 ounces, being below the tenth percentile for 37 weeks gestation (approximately 25th percentile for 35 weeks—Fig. 1). Head circumference was 33.5 centimeters at the newborn examination and 34.5 centimeters at four days. Newborn condition was satisfactory. At five weeks, a mild diarrhea was treated with Furoxone (furazolidone). Subsequent failure to gain for two weeks was managed with a formula change to "Sobee" and then Nutramigen. By sixteen weeks the child was alert, happy, seemed to see normally, and was apparently making satisfactory progress. The head circumference was 40.5 centimeters (five centimeters is the average increase at sixteen weeks).

At twenty weeks, the infant followed with her eyes, cooed, and was able to hold her head erect but poorly. Weight gain was slow (growth chart—Fig. 2). A neurosurgical consultant considered that the child might have an arrested hydro-

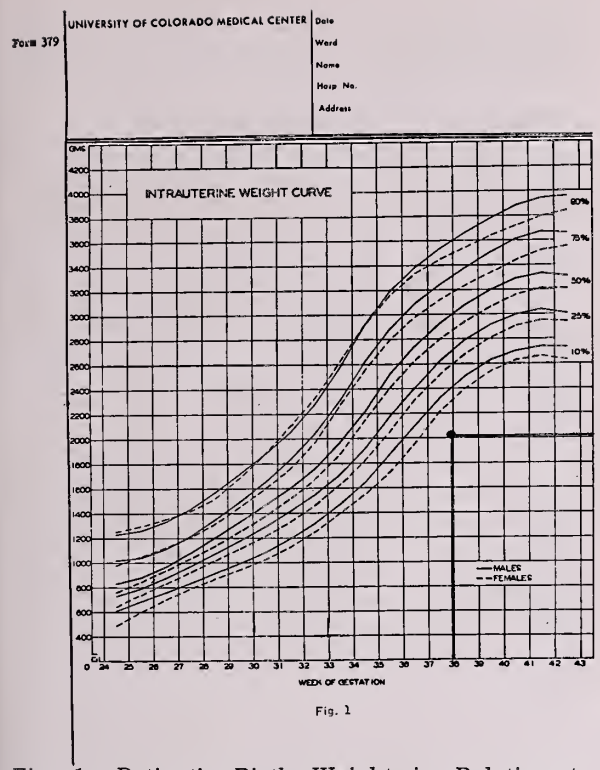

Fig. 1. Patient's Birth Weight in Relation to Gestational Age. Standard Intrauterine Growth Curve.

cephalus, but head growth was now commensurate with age (see Table 1). By 36 weeks, the patient was trying to feed herself, followed with her head, but could not sit alone. By 17 months, the child was sitting alone, trying to pull up, and standing in a walker. Mumps occurred at 18 months without complication. At 33 months, an orthopedic evaluation noted tight heel cords. The child improved after three months treatment with casting and subsequently started to walk. The child had had several ear infections, treated with prompt response, as well as several bouts of mild gastroenteritis.

TABLE 1
HEAD GROWTH

Birth	33½	(Mean 35 ± 1.2 cm.)
4 Days	34½	
3 Weeks	35½	
6 Weeks	36½	
12 Weeks	39½	
16 Weeks	40¼	(Average increase at 16 weeks — 5 cm.)
20 Weeks	41	
26 Weeks	42½	
1 Year	45	(Average increase at 1 year — 10 cm.)
3 Years 4 Mos.	50.8	(50 cm. = mean for 3 years.)

Examination (at 39 months) revealed a weight of 24 pounds, height of 34.5 inches (Fig. 2), and head circumference of 50 centimeters (mean for three years). The head was elongated with frontal bossing. The child appeared alert but was mute. There were poorly developed dental enamel and a high arched palate, and the heel cords were still moderately tight, the left only allowing flexion to 90 degrees.

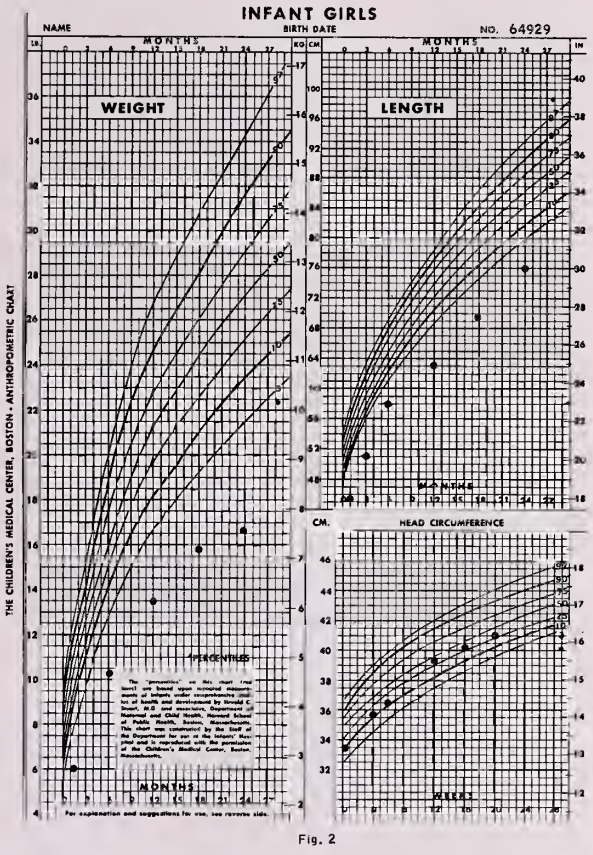

Fig. 2. Patient's Growth Plotted on Anthropometric Chart for Infant Girls.

Funduscopic examination revealed bilateral macular pigmentation strongly suggestive of macular dysgenesis secondary to old infection. On neurological examination a slightly spastic ataxic gait and greater muscle tone on the left were noted. Fundi of mother and sister were normal, and family history was negative for neuromuscular abnormalities, retardation or seizures.

Laboratory studies included serology, test for toxoplasmosis, skull x-rays, buccal smear, protein bound iodine, and chromosome studies, all of which were within normal limits. The bone age was at the two-year level. A screening test for rubella neutralizing antibody was found positive in both mother and child in the 1:4 titer used.

Audiometric testing has established hearing levels within a 25 to 40 decibel range binaurally. Such a hearing level would classify the patient as having a mild hearing loss and could, in itself, restrict language and speech, but could not account for the lack of speech to the degree exhibited by the patient.

She expressed herself very well through gestures and seemingly understood others through the visual channel. Initially, she did not use verbal language nor did she respond to any speech signal. After an auditory training program for five months using amplification, verbal language is progressing to a limited extent. This child's behavior, when considering her communication problem, is more compatible with a central hearing disorder than with end organ (cochlear) damage.

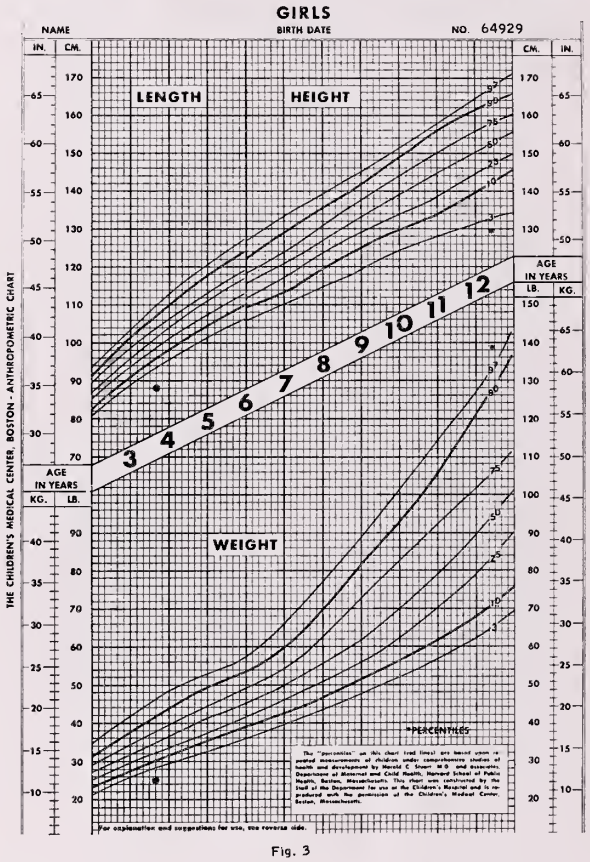

Fig. 3

Fig. 3. Patient's Growth Level at 40 Months.

This child presents the dilemma of recognizing, or at least suspecting, rubella teratology in handicapped infants born at times other than during rubella epidemics.

Some of the suggestive findings include low birth weight in an infant when the history suggests the pregnancy is near term. The importance of this finding has been stressed repeatedly as an indication of intrauterine difficulties but is not specific for congenital rubella syndrome. Its delineation is made easier by the use of the Intrauterine Growth Curves established by Lubchenco et al.[3] Head circumference of term size with subsequent normal head growth favors intrauterine growth retardation but not congenital rubella syndrome where small head size is frequent. The value of growth curves in differentiating normal head size from hydrocephalus is emphasized in this case.

This child failed to present the several typical findings in the newborn emphasized in the recent epidemic, including hepatosplenomegaly, thrombocytopenic purpura and congenital heart disease. Subsequent growth failure as in this child has been repeatedly observed in congenital rubella syndrome. However, this may also be seen in other cases of low birth weight.

The problem of the child's communicative disorder is incompletely defined. It has been recognized that she has some hearing and was considered aphasic. Recent tests have defined a moderate hearing deficit. However, she is not considered to be retarded to a degree to prevent speech development. Aphasias are not mentioned in reports dealing with deafness in this condition. However, Laguaite reported 5 of 27 patients who had associated central nervous system defects presenting some retardation or perceptual difficulties.[1] Other reviews less clearly define the problem. None of these were recent enough to have serologic documentation of the diagnosis.

Audiograms in congenital rubella syndrome are usually described as flat, although greater loss in either high or low frequencies are observed.[1,4,5] Reports show a high incidence of deafness without other defects and emphasize that the frequency of hearing disorders in congenital rubella syndrome may be underestimated. Withdrawal of these children with congenital rubella syndrome (CRS) from social contacts tends to add to their apparent lack of intelligence. The deafness which up until now has been described as neurosensory loss is moderate to severe (levels usually at 65 decibels). Variation between the two ears and even unilateral deafness have been observed.[4] Educational and emotional problems may ensue even with unilateral involvement. A recent preliminary report from Houston indicates two types of hearing difficulty in their CRS group from their 1963-1964 epidemic. In some, the problem is mechanical with stapes fixation. In

others, there is central nervous system involvement leading to an apparent loss.[7] No detailed reports on the late complications are yet available from that outbreak.

Various orthopedic problems are occasionally seen in CRS. The retinal changes of this patient are likewise compatible but not diagnostic. Marks has previously stressed that congenital retinal abnormalities are among conditions likely to be overlooked.[8] In the absence of syphilis and toxoplasmosis, this finding favors rubella.* There are no findings now to support cytomegalic inclusion disease, but urinalyses were not done at an early age to exclude this diagnosis.

A finding of a significant titer of rubella neutralizing antibody in a child without history of clinical rubella is accepted as evidence of congenital rubella. The antibody apparently persists for years. The mother's lack of known exposure and the nondescript nature of her rash certainly does not exclude this diagnosis. The finding of maternal neutralizing antibody offers evidence of infection some time in the past and is consistent with the diagnosis.

The availability of a laboratory test that will identify babies with congenital rubella syndrome makes the need for a high index of suspicion mandatory. In this way, complications can be diagnosed and treated early. Exposure of unsuspecting susceptible personnel to infectious newborns will be avoided. The value of the new laboratory serologic diagnostic tests in diagnosing this syndrome is obvious. The need for continued careful evaluation of all cases to ensure maximum habilitation is demonstrated in this case.

*After preparation of this manuscript, a detailed discussion of rubella retinitis appeared by Kresby and Nauheim in the American Journal of Diseases of Children 113:305, 1967.

Summary

A case probably representing sporadic congenital rubella syndrome is presented. Some of the findings in early infancy and later defects as growth failure, communicative disorders, orthopedic problems and eye abnormalities, are described. •

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Colorado-Wyoming Regional Medical Program

A new brochure of interest to the health profession in Colorado and Wyoming has been produced which introduces the Colorado-Wyoming Regional Medical Program. The brochure covers a brief history of how the national---and Colorado-Wyoming—RMPs were formed, some local regional goals, a reproduction of a portion of Public Law 89-239 (the Heart Disease, Cancer and Stroke Amendments of 1965) and a list of the local Regional Advisory Council. For free copies contact: Public Information Office, Colorado-Wyoming Regional Medical Program, 4200 East Ninth Ave., Denver, Colorado 80220. Phone: 394-7506.

Rubella - - 1967*

J. Albert Browder, MD, and William E. Clapper, Ph.D.,
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A wealth of new information has been developed by clinical and laboratory studies of rubella in the past five years. The author reviews major new knowledge, especially as it applies to areas of clinical and laboratory diagnosis and complications in the fetus and infant.

MATON IS GIVEN CREDIT for the first description of rubella in 1815, as well as for pointing out the difficulty of clinical differentiation of this disease from other exanthems.[1] It was Gregg's observations of the fetal anomalies following maternal rubella which served as the impetus for recent studies of this disease.[2] Current developments have arisen as the result of the isolation of the virus in 1962 by Parkman et al.,[3] and Weller et al.,[4] and the subsequent development of serologic diagnostic technics with their application in a widespread epidemic in 1963-1964.

Most physicians have been taught that the typical findings of rubella in children consist of a mild or no prodrome, adenopathy especially of the post-auricular, cervical and suboccipital nodes, and a pink, maculopapular rash spreading from the face downward. In typical cases fever may be present, and, especially in the adult, there may be a prodrome of fever, headache, malaise, mild respiratory symptoms, and conjunctivitis for as long as four or five days. Difficulties in the diagnosis arise because of the established fact that subclinical rubella or rubella without exanthem may occur in as many as 25 per cent of cases, including obstetrical cases.[5,6] Sever's studies on pregnant women,[6] as well as the studies of Phillips et al.[7] and of Schiff et al.[8] on infants with congenital rubella syndrome, stress the frequency of the unapparent infection.

Virus identification has allowed confirmation of diagnosis in cases with adenopathy and with atypical exanthems. Likewise, it has allowed further differentiation of rubella from many other conditions producing similar maculopapular rashes. A list of some currently recognized conditions with such rashes is included in Table 1. Undoubtedly, this list

TABLE 1
CAUSES OF RUBELLA-LIKE RASHES

Rubeola
Coxsackie A2, 4, 5, 9 and 16
Coxsackie B1, 3, 4 and 5
ECHO E1, 2, 3, 4, 5, 6, 7, 9, 11, 14, 16, 18 and 19
Reovirus Type 2
Adenovirus Types 2, 3, 4 and 7
Respiratory Syncytial Virus
Scarlet Fever
Roseola
Erythema Infectiosum
Infectious Mononucleosis
Cat Scratch Fever
Toxoplasmosis
Typhus
Rocky Mountain Spotted Fever
Drug Eruptions
Toxic Erythemas

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will prove quite incomplete with further passage of time. The differential diagnosis of infections with exanthems has been extensively reviewed elsewhere.[5,9,10,11]

Though classically the period of communicability is taken as the prodromal period and four days afterward, the virus has been recently demonstrated in the pharynx for up to five days before the rash appears. It has been sporadically recovered up to fourteen days after the appearance of the rash as well as one week before the appearance of the exanthem.[5,12] Therefore, because of such a long period of infectivity, isolation and prevention of the spread of the disease are difficult. Immunity resulting from an infection is felt to be lifelong.

Helpful diagnostic laboratory studies now available include virus identification. A positive culture probably indicates infection. Neutralizing antibodies can be identified in the laboratory, but the methods are slow and are too expensive for most laboratories to include as a regular procedure. As in other viral infections, a rise in the titer of this antibody, or conversion of negative to positive reaction, indicates recent infection. Antibodies are formed by the infant in congenital rubella, as well as being transmitted by the mother to the fetus.[13] Dudgeon suggests that the persistence of the virus into the second and third trimester is the basis for active antibody formation.[14] Complement fixing antibodies appear during convalescence and their identification now offers a simpler, shorter technic for serological diagnosis of the disease. Unfortunately, however, infants infected in utero do not appear to have complement fixing antibodies.[13] Recently a more rapid procedure for detecting neutralizing antibodies which makes use of the indirect method of immunofluorescence has been developed.[15] A hemagglutination test for antibodies using chick erythrocytes, which rubella virus will agglutinate, holds promise for all laboratories since the antigen may now be purchased commercially.*[16] The hemagglutin inhibiting antibodies persist for years in contrast to complement fixing antibodies and so may be used for the determination of the immune state.

*From Microbiological Associates, Bethesda, Maryland.

Maternal Rubella and Associated Congenital Defects

The classic, original syndrome in the newborn recognized to be related to maternal rubella in the first trimester included the following defects:

1. Hearing deficiencies,
2. Various eye anomalies, including cataracts, glaucoma, squint, and microphthalmia,
3. Congenital heart disease, especially patent ductus arteriosus, pulmonary stenosis and intra-atrial defects,
4. Central nervous system abnormalities, including microcephaly.

Recent observations extend these findings considerably. Table 2 presents observations from six major United States cities during the 1963-1964 epidemic.

A convenient way to consider the findings in the affected offspring is based on the age of their appearance. It is important to remember that evidence now indicates that there is direct invasion of the fetus which leads to the teratogenic effects. This can occasionally lead to abortion of the fetus or fetal death and later abortion.

If death does not occur, the resulting infection may lead to premature delivery but most frequently to term delivery with a malnourished newborn or one with a low birth weight. The instance of weight below the expected range is common and reported in up to 50 to 80 per cent of infants demonstrating neonatal involvement[17] (Table 2); aggregate, however, is 36 per cent. Multiple

organ involvement is due to the wide-spread tissue invasion by the virus.

The more common recognizable defects in the neonatal period and their observed associated incidence are listed in Table 2; this table summarizes reports from seven studies carried out in the 1963-1964 epidemic.[7,8,13,17-21,25] For the first time in these studies, serologic proof of diagnosis of maternal and/or congenital cases has been carried out. Variations in the incidence of the different defects is noted. Ths is probably explained in part on age when the infants were seen in the various centers as well as the extent to which infants were studied as knowledge of the newer defects became available. Based on the combined figures from these studies, abnormalities of significant frequency include eye defects (57%), congenital heart defects (75%), thrombocytopenic purpura (63%), hepatosplenomegaly (50%), central nervous system inflammatory changes (38%), and bone changes especially in long bones (36%). Less frequent findings included hepatitis, pneumonitis, and myocarditis. Occasional reports of genitourinary anomalies, clubfoot, micrognathia, anencephaly, and cleft palate make their association less certain. Overall mortality is high—25 per cent.

An additional interesting teratogenic effect is an alteration of dermatoglyphics with an increase in simian lines and of distal axial triradii. This gives support to the idea that dermatoglyphics might offer clues of deleterious intrauterine experience.[22,23]

Later abnormalities recognized in infancy and childhood have not yet been reported from the recent epidemic. However, other studies show hearing defects (usually sensorineural), cataracts, growth failure, microcephaly, and hydrocephaly to be prominent features that may be recognized in later months or years of life even where the newborn appears normal. In Schiff's study, 33 of 43 virus positive infants appeared normal at birth.[8]

TABLE 2

SURVEY OF BIRTH DEFECTS

FROM 1963-1964 EPIDEMIC

Manifestations	Ratio in Each Series								
	New York City[17]	New Haven[18,19]	Cincinnati[8]	Houston[7,25]	Memphis[20]	Philadelphia I[13]	Philadelphia II[21]	Aggregate Ratio	% in Aggregate
Ocular Defects	26/58	24/36	7/10	11/25	16/22	12/20	16/21	109/192	57%
Low Birth Weight	27/58	—	7/10	20/25	12/17	10/20	12/21	46/129	36%
Heart Disease	38/58	31/36	6/10	18/25	22/22	15/20	14/21	144/192	75%
Bone Changes	13/58	3/5	—	13/25	6/17	10/20	7/21	46/129	36%
Thrombocytopenic Purpura	58/58	13/36	2/10	20/25	10/22	4/20	9/21	121/192	63%
Hepatosplenomegaly	42/58	19/36	3/10	20/25	4/22	4/20	7/21	97/192	51%
C.N.S. Signs	—	—	—	11/25	10/15	5/20	5/21		
Death	17/58	5/36	4/10	5/25	6/22	6/20	—	43/171	25%
Others:									
Anemia	10/58	—	—	—	—	3/20	—		
Myocarditis	—	—	—	—	7/22	—	—		
Pneumonitis	—	—	1/10	—	6/22	—	—		
Hepatitis	11/58	—	5/10	—	3/22	—	—		
Microcephaly	—	3/36	—	—	—	—	—		
Esophageal Atresia	—	1/36	1/10	—	—	—	—		
G.U. Defects	6/58	—	—	—	—	—	—		
Club Feet	—	1/10	—	—	—	—	—		
Cleft Palate	—	3/10	—	—	—	—	—		

Management

A part of good medical management of suspected cases of rubella, whether newborn, child, or adult, must be careful isolation from any woman in early pregnancy.[24] As yet, no treatment or prevention is available for the fetus. Gamma globulin may prevent clinical symptoms but infants whose mothers received this treatment have still shown defects.[17] Only 45 per cent of the infants in the group studied by the cooperative Cerebral Palsy study had known exposure.[6] This suggests that little help could be offered during pregnancy to a large portion of the cases before the maternal infection. The best answer appears to be in a vaccine administered before conception. Such a vaccine appears a real possibility in the near future based on present experimental work.[26]

Though prevention is not yet possible other than by isolating known cases of rubella, the parents of the exposed fetus must be made aware of the importance of close follow up for neonatal and later complications. Surgical intervention is likely to be needed in cases of cataracts, glaucoma, and congenital heart disease. Other complications may also require special management.

Summary

Recent developments in rubella have been reviewed. These include problems of diagnosis, current knowledge of periods of infectivity, laboratory tests, and new aspects of the congenital rubella syndrome.

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Transabdominal thoracotomy

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Thoracotomies can be performed by abdominal or other extra-thoracic approaches. Such opportunities are rare, but practical.

ALERT SURGEONS may often spare patients an additional incision, or even a separate operation, by combining procedures through a properly planned approach. A frequent example is performance of a prophylactic appendectomy during cholecystectomy through the usual subcostal incision. In the past some authors felt that the risk of appendicitis was less than that of possible complications from such a practice, but more recently it has gained acceptance under suitable conditions,[1] and the principle has been successfully extended to appendix removal during right inguinal herniorrhaphy without antibiotic coverage.[2]

Occasionally a procedure will suggest itself, which is rejected by the careful surgeon largely from lack of precedent. We therefore call attention to successful resection of thoracic lesions by transdiaphragmatic approach during laparotomies. We find no previous reports of such a combination of procedures.

CASE REPORTS

Case 1: A white male, aged 47 years, was admitted with a tentative diagnosis of myocardial infarction because of severe right parasternal pain. This was disproved, but translucent stones were found on cholecystogram, and chest films demonstrated a noncalcified "coin lesion" in the base of the right lung anteriorly (Fig. 1). The patient was advised to have both lesions resected, with the understanding that cholecystectomy would be performed first, since this would be impractical through a thoracotomy incision, and that the coin lesion would be resected during the same operation if all circumstances proved favorable. It should be noted that the pulmonary lesion was not only quite peripheral, but was quite low and anterior.

Fig 1. Roentgenogram of "coin lesion" right base anteriorly.

A routine right subcostal incision was therefore made, and after retrograde cholecystectomy and coaptation of the gallbladder bed, the anterior portion of the suspensory ligament of the liver was incised sufficiently to drop it, exposing the anterior diaphragm. After palpation had demarcated the pericardium, the diaphragm was seized with Allis clamps, and incised transversely four centimeters from the right costal arch. The readily palpable pulmonary lesion was isolated between Buie clamps and resected. The gross appearance

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on section was confirmed by frozen section as hamartoma, a lesion which carries a good pronosis. (Resection is warranted not only by the potential for continued growth but for occasional malignancy.[3]) After the lung was closed with a lockstitch of 000 atraumatic catgut (Fig. 2), and tested for leaks, the diaphragm was repaired with a lockstitch of 00 atraumatic Mersilene. Since the gallbladder fossa had remained dry, abdominal drainage was omitted.[4] Lateral thoracic drainage was also omitted, although placement of a drain could have been readily accomplished. No transfusion was given, since total blood loss was estimated at less than 150 cc.

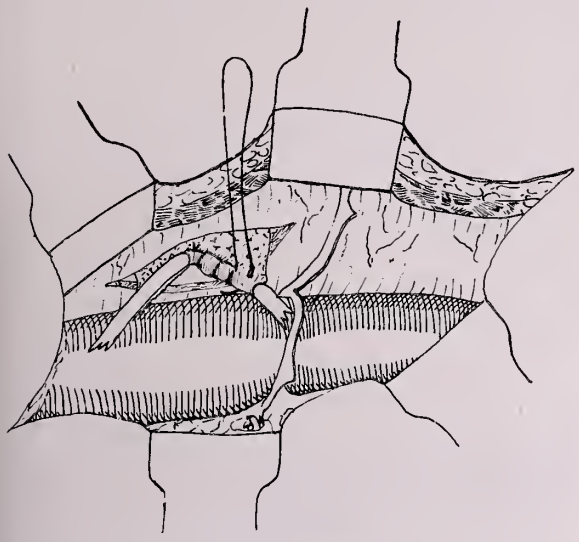

Fig. 2. Transabdominal wedge resection: lung closure.

Case 2: A 52-year-old housewife had been followed for two years for a steadily growing, though apparently asymptomatic, tumor. It was located in the right cardiophrenic angle anteriorly. Because of radiolucency, it was thought to be fatty tissue, and the spherical outline suggested a lipoma rather than a hypertrophic fat pad (Fig. 3). She also suffered from peptic esophagitis, and barium outlined an incarcerated hiatal hernia. She had previously undergone cholecystectomy elsewhere through a routine right subcostal incision.

At surgery this subcostal incision was redeveloped and extended into the left rectus sheath to permit lateral retraction of the left rectus muscle. A Smith retractor was then applied. (We would stress the utility of this admirable device in these cases, since it improves exposure even if there are adequate assistants. It will be recalled that this retractor differs importantly from the usual self-retaining retractor, in that the entire instrument is tented up from the abdominal cavity by sterile supports running down to clamps on the table (Fig. 4). This steady lifting of the entire body wall, combined as required with tilting of the table head up, or often to one side,

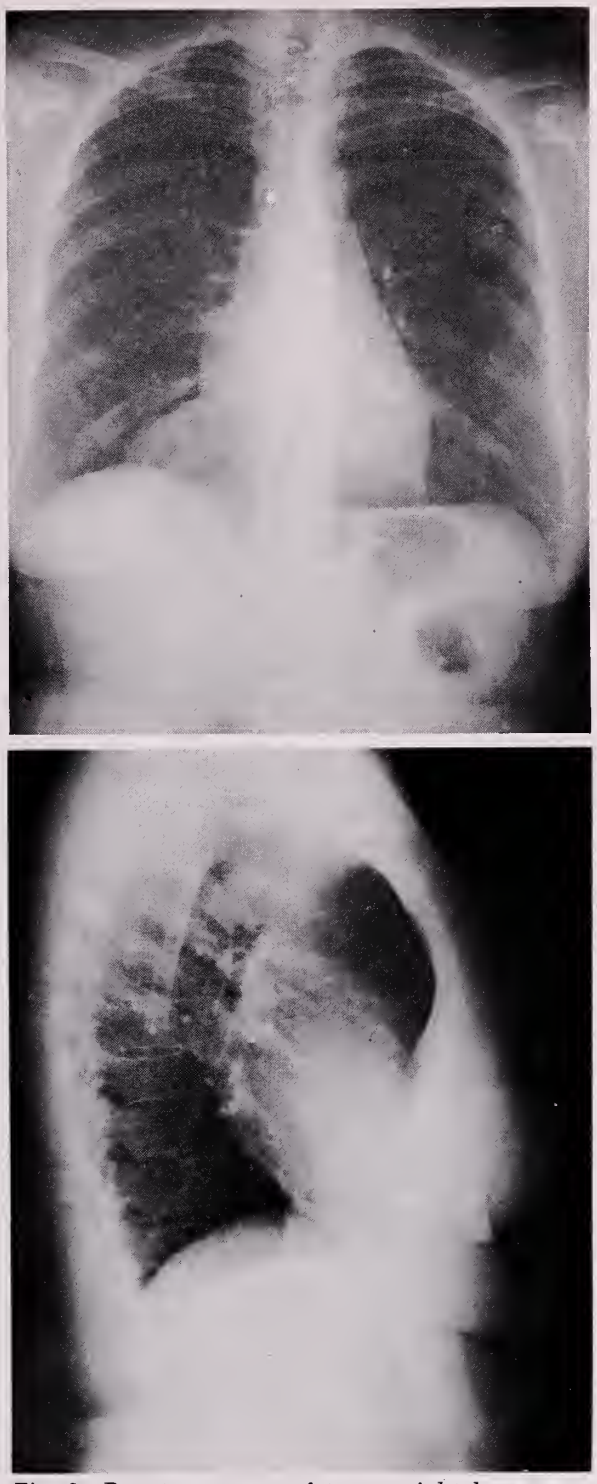

Fig. 3. Roentgenogram of tumor right lower mediastinum, AP and lateral views.

makes many difficult upper abdominal procedures easy.)

After incising the diaphragm as in the previous case, the well demarcated tumor was readily isolated by digital dissection without entering the pleural cavity. It arose from a broad pedicle near the xiphoid, and was removed with capsule intact

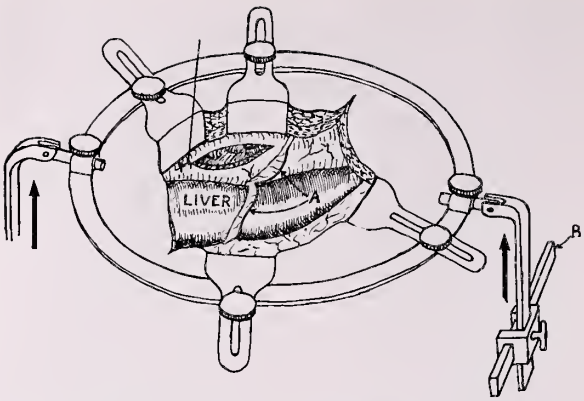

Fig. 4. Smith retractor. A. Incised coronary ligament; B. Side rail of operating table.

without requiring ligation of any vessels. The diaphragm was closed and the hiatal hernia corrected. The postoperative course was uneventful, and the x-ray confirmed complete removal of the tumor (Fig. 5).

Granted that an additional thoracotomy incision in each of these cases would not have materially increased the time taken for surgery, nor the risk, it would have added discomfort. There would also be an inevitable loss of function of unpredictable extent from pleural adhesions, which were avoided in the second case and minimized in the first.

Relevant progress has been made in invasions of the thorax from the upper end,

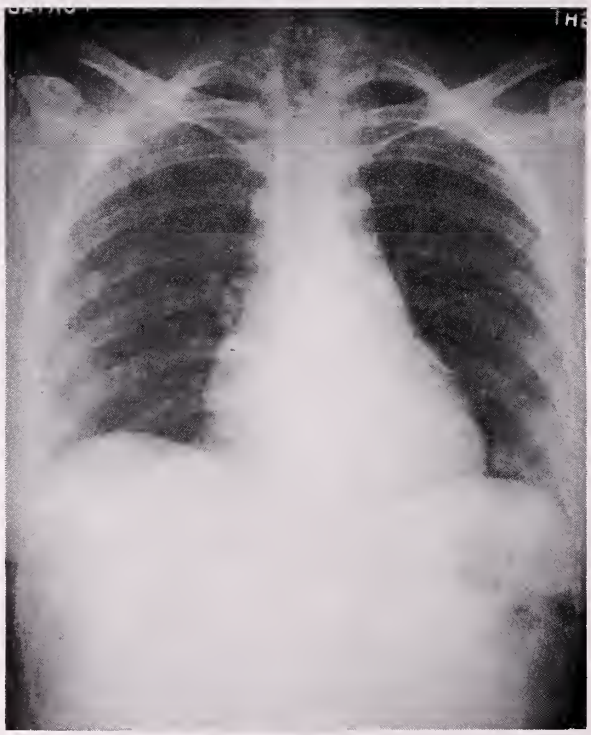

Fig. 5. Postoperative chest film.

during exploration of the neck for lymph node biopsy. We do not share the feeling that the thoracic surgeon must always attain his goals through the rib cage! Most surgeons have been unable to duplicate the high per cent of positive scalene node biopsies originally reported by Daniels.[5] However, one may obtain good access to the superior mediastinum as well as to the thoracic inlet through the same incision. This may be accomplished by dividing the insertion of the scalene muscle on the first rib as recommended by Reed.[6] An interesting example of this approach is the following case.

CASE REPORT

A debilitated male, aged 68 years, was admitted with multiple complaints and diagnosis of diabetes mellitus. Many years previously he had undergone radical resection of the right side of the neck after a removal of a facial malignancy. Admission films demonstrated "a lesion involving the right apex . . . probably a metastasis," and there was also an apparent mass protruding from the right upper mediastinum (Fig. 6). When lesser methods for diagnosis were exhausted, he was transferred to the thoracic surgery service for

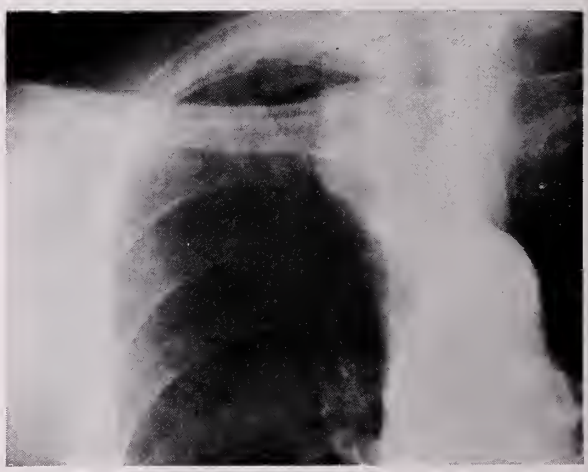

Fig. 6. "Lesion in right apex with mass in right upper mediastinum." (Third case.)

biopsy, presumably by thoracotomy. Because of debility, and the likelihood or irresectability, we decided first to explore the right scalene fossa. On finding no significant nodal material in the scalene fat pad, the scalene muscle was divided and the superior mediastinum explored. The lesion projecting from the mediastinal silhouette was found to be a markedly distorted carotid artery, though no tumor, atherosclerotic plaques or other mediastinal pathology were palpable. The dome of the right pleural cavity was then entered and the lung palpated, as the anesthesiologist maintained expansion, but no pulmonary disease

was revealed. It was then evident that the apparent right apical mass was actually pronounced kinking of the right subclavian artery, with a sharp bend down through the superior thoracic aperture. This condition is not extremely rare, as shown by Hsu and Ristin.[7] The 6.0 cm. wound was closed without drainage. The patient resumed his normal activity next day, again illustrating in a very poor risk patient the occasional value of thoracotomy through an indirect approach.

Summary

Transdiaphragmatic resection of suitable thoracic lesions during laparotomy, although hitherto undescribed, has been demonstrated as practical by clinical trials. Opportunism is recommended in selecting approaches for thoracotomy.

The neck may be utilized for access to the superior mediastinum and thoracic inlet. •

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Maternity care in New Mexico*

J. P. Voute, MD, Santa Fe, New Mexico

Maternal and child mortality and morbidity can be reduced by the establishment of maternity clinics in areas of socio-economic deprivation.

It is estimated that 95 per cent of all deliveries in this country take place in hospitals and are performed by physicians. Thus 95 per cent of all pregnant women have the benefit of high quality care in terms of professional skill and modern technic and equipment. Despite this quality delivery care it is surprising to find that in 1962 the United States ranked eleventh in infant mortality rates among 15 countries, with relatively complete reporting using the W.H.O. definitions of live birth and of infant death (25.3 per 1,000 live births). In 1964 this rate was 24.2 per 1,000 live births in the U.S., and it was 29.2 in New Mexico, which is second highest among the eight mountain states.

Besides maternal and fetal death, we are also concerned about the health of the mother and child. The impact of a stillborn baby or of an infant death is acute and great, but the impact of lifelong physical or mental disability is of much longer duration, and as such it is even greater to the parents and to the society. Many congenital disabilities can be prevented, not only with adequate prenatal care, but also earlier in the women's life with attention to nutritional status, immunization against the viral diseases, health education, sex education, pre-marital examination and, in the future perhaps, genetic counseling. In this paper we will make an effort to assess the pattern of prenatal care in New Mexico.

Available figures on prenatal care are mostly derived from large metropolitan general hospitals and public health department

*From the Maternal and Child Health Division of the New Mexico Department of Public Health.

clinics. An estimated 20 to 50 per cent of clients of these institutions did not receive any ante-natal care.[1,2] For obvious reasons, figures concerning non-metropolitan and rural areas are difficult to obtain, and less available. A study in California revealed that an estimated 10 to 40 per cent of the mothers delivered in county hospitals had not received any prenatal care.[3]

Data

Assuming that the legally required blood serology is generally done as soon as a pregnant woman registers for care in the physician's office, maternity clinic or hospital, it seemed justified to use known serology data as a yardstick for the time women seek prenatal care. This information was collected from the birth certificates in New Mexico during 1964. The Division of Vital Statistics of the Public Health Department assembles these data and lists them as follows: (1) first trimester, (2) second trimester, (3) third trimester, (4) at time of delivery, (5) none, and (6) date of serology unknown.

Table 1 suggests that at least 35 per cent of the women seek maternity care in the first trimester and that (columns 4 plus 5) 4 per cent of the women had no prenatal care. Likewise, if it is permissible to label column 3 as "inadequate prenatal care," a total of 33 per cent of the women received inadequate or no prenatal care.

An effort was then made to study prenatal care in relation to urban population, rural population and socio-economic condition. For that purpose, all city and county figures with more than 10 per cent date-unknown were eliminated as being unsuitable for further study. Of the remaining material, we separated a group (Table 2) of "good prenatal care," which consisted of those cities or counties with 50 per cent or more first trimester serologies, and another group (Table 3) of "poor prenatal care," which consisted of counties with 10 per cent or less first trimester serologies. It is obvious that none of the figures in Tables 2 and 3 have absolute validity. However, certain relationships between the prenatal care people seek and receive, their living conditions in terms of urban or rural location and socio-economic factors can be observed. No attention was paid to any cultural patterns among minority groups such as the Spanish-American or Indian population.

We then proceeded to study a group of women exclusively from low income strata. For this purpose we studied a random sample of 284 women who delivered in 1964 in Bernalillo County Indian Hospital in Albuquerque. Table 4 shows at what time during gestation these women received their first prenatal care, and Table 5 shows the time of their serologies. Table 5 shows that the use of serology data is probably justified, as

TABLE 1
TIME OF SEROLOGY DURING PREGNANCY, 1964
(in percent)

Total Deliveries	1 first trim	2 second trim	3 third trim	4 at delivery	5 none	6 date unknown
26,392	35%	18%	29%	1.4%	2.6%	13.6%

TABLE 2
FIFTY PER CENT OR MORE SEROLOGIES IN FIRST TRIMESTER

City or County	Percentage	median family income 1960	welfare recipients (Per M) 1963	unemployment pct. 1963	illegitimate births pct. 1963
Los Alamos	70%	$9,269	0.43	1.7	2.9
Roswell	63%	5,187	38.4	4.4	4.9
Albuquerque	56%	6,252	47.1	3.8	6.6
Lincoln Co.	50%	3,912	50.4	4.7	1.04

TABLE 3
TEN PERCENT OR LESS SEROLOGIES IN FIRST TRIMESTER

City or County	Percentage	median family income 1960	welfare recipients (Per M) 1963	unemployment pct. 1963	illegitimate births pct. 1963
Guadalupe Co.	0%	$3,289	140.0	7.6	11.1
Taos Co.	0.6%	2,204	161.4	13.3	7.1
Sandoval Co.	5.0%	2,409	92.7	6.5	23.0
Sierra Co.	5.0%	3,269	122.3	3.5	2.5
McKinley Co.	10.0%	4,397	58.5	5.3	9.7

TABLE 4
TIME OF FIRST PRENATAL VISIT

TOTAL	Weeks of Gestation 0-12	12-24	24-36	36-up	No Serology
284	5 (1.8%)	35 (12.3%)	103 (36.3%)	37 (13%)	104 (36.6%)

TABLE 5
TIME OF SEROLOGY DURING PREGNANCY

TOTAL	Weeks of Gestation 0-12	12-24	24-36	36-up	No Prenatal Care
284	5 (1.8%)	29 (10.2%)	97 (34.2%)	103 (36.2%)	50 (17.6%)

the figures for the dates of serology taken are consistent with those of the first prenatal visits (compare Tables 4 and 5).

If we compare the figures of Table 4 with the state figures based on the serology data the shift toward no prenatal or inadequate prenatal care in this underprivileged hospital group is appalling. The prematurity rate in this group of 284 women was 14 per cent (40 women); 67.5 per cent of those received prenatal care after the 36th week or none at all (49.6 per cent for the total group.) The number of stillbirths was eight (2.8%); five of those received prenatal care after 36th week or none (62.5%). The number of out of wedlock pregnancies was 68 (24%); 22 of those were primigravidae and 46 multigravidae. Table 6 shows their behavior pattern in regard to prenatal care.

TABLE 6
ILLEGITIMATE PREGNANCY AND DATE OF FIRST VISIT

Number of Women	Weeks of Gestation 0-12	12-24	24-33	36-No Care
68	3%	3%	38.2%	58.8%
Total Group 284	1.8%	12.3%	36.3%	49.6%

Conclusions from this study can be summarized as follows:

1. Prenatal care received by low income women delivered in Bernalillo County Indian Hospital in Albuquerque was considerably less than the state average.

2. Prematurity rate was above the state average (14% and 9.6%).

3. The stillbirth rate was above the state average (2.8% and 1.3%).

4. The illegitimate birth rate was considerably above the state average (24% and 7.4%).

Discussion

In New Mexico then, as in many places, there is unsatisfactory utilization of prenatal care facilities, particularly by the low socio-economic population groups. I believe the medical profession, both in private practice and in public health, cannot be satisfied with this situation. A chain is not stronger than its weakest link, and as long as prenatal care remains a weak link, the strength of the chain of total maternity care is jeopardized.

We now know that prenatal care is insufficient, not because physicians, by and large, don't offer it in the same humanitarian way in their offices as they do at delivery, but because the low-socio-economic groups for reasons like poor education, poorly developed motivation, and many other factors, fail to seek it.[4,5] Gardiner[6] in a comprehensive study of 730 impoverished patients found that 76 per cent of the pregnant women knew they should seek prenatal care early in pregnancy, but that only 16 per cent acted accordingly. Evidently their motivation to seek medical care is limited to the crisis situation of acute physical or mental distress. Pregnancy by these people is not experienced as a crisis situation until the time of delivery or until some dramatic complication becomes manifest.

The conclusion therefore must be that prenatal care will have to be brought closer to the population by means of health education, case-finding, and expanded communication with the poorly motivated population groups. This means establishment of properly equipped maternity clinics in poor neighborhoods and proper utilization of manpower in the health fields (nurses, social and case workers, etc.) to induce the people to use these facilities. Perhaps even volunteer groups can perform these tasks effectively, as in New Zealand.[7]

The practicing physician lacks the time to reach out into the community in such a manner. More important, solicitation of patients is not consistent with the ethical code and the classical doctor-patient relationship. Health education in the physician's office is geared toward the needs of the bulk of American middle class population. This group generally thinks in terms of long term planning for goals to be achieved in life. Preventive and curative health care for the family are integral parts of this planning. The general pattern in the low socio-economic strata is very different; there is a passive attitude towards the events of life with very little or no planning at all.[6]

The solution then must be that public health and private practice join hands with a common goal to fill the deplorable gaps in maternity care in the low socio-economic

strata of our society. This is a feasible goal provided the two disciplines recognize their specific contributions to reach this. Once this goal is reached it is up to the physician in the clinic to provide quality prenatal care, assisted by the necessary auxiliary manpower and for this purpose he must agree to temporarily leave the shell of his office in exchange for the clinic environment.

We recognize that the clinic setting does not match that of the private medical office. The free choice of physician, for one thing, cannot be guaranteed, where physicians will participate on a rotating basis. It has been said that the clinic service is discriminatory against the low income people, and this discourages some physicians from participating in the service. I do not believe this is a valid objection after what has been said previously in this paper. The need for prenatal care is the dominant and decisive factor.

Conclusions

In planning services to the underprivileged, our objectives can best be formulated as follows:

(1) to reduce mortality and morbidity rates by rendering preventive maternity services to all women,

(2) to make such services available and accessible to women in the low socioeconomic strata of the population.

(3) to accomplish the latter by moving these services out into "poor neighborhoods" and into rural areas at present deprived of such services, and

(4) to utilizing case-finding and health education technics to motivate women to seek early prenatal care in these facilities.

ACKNOWLEDGMENT

I am grateful for the cooperation of Robert A. Munsick, M.D., Ph.D., Professor and Chairman Department of Obstetrics and Gynecology, University of New Mexico School of Medicine, in collecting data on the patients delivered at Bernalillo County Indian Hospital.

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NEW MEXICO

Abstract of Minutes
House of Delegates of
The New Mexico Medical Society

Eighty-Fifth Annual Meeting
May 18-20, 1967

The House of Delegates held two sessions at its Eighty-Fifth Annual Meeting in Santa Fe, New Mexico, May 18-20, 1967. The Speaker, **Hugh B. Woodward,** and Vice-Speaker, **Ronald Dorn,** alternated in presiding before the House. At the first meeting all reports published in the Handbook and all supplemental reports and resolutions which had been mimeographed after publication of the Handbook, as well as verbal and typed resolutions introduced on the floor of the House, were referred to appropriate reference committees.

FIRST SESSION
May 18, 1967

The House was called to order at 2:00 p.m. **Jack C. Redman** pronounced the invocation. Sixty-nine delegates answered the roll call, including certified substitute alternates.

Zigmund W. Kosicki, Santa Fe, Vice-President, Southwestern Medical Association, announced that the SMA will meet in conjunction with a meeting of the Texas Medical Association in El Paso, February 8-10, 1968, at the Sheraton Motor Inn. All New Mexico physicians are cordially invited.

The Speaker announced that **Ira A. Budwig,** Fraternal Delegate from Texas Medical Association, was unable to attend this meeting.

The Speaker invited **Tom Alphin, M.D.,** Medical Director, Equitable Life Assurance Society, to bring greetings to the delegates. Dr. Alphin commented that we have passed almost one year of Medicare, and that in that time, the administration of the program had run smoothly. He pointed out that management of Medicare was just as near as your telephone in Albuquerque and urged physicans to call whenever there was a difference in opinions.

The President of the Society, **Dr. Tom Carr,** was recognized for the purpose of presenting the A. H. Robins Community Service Award for 1967. Dr. Carr explained that the recipient of the Award was selected by the House of Delegates at the Interim Meeting in 1966, and that the one chosen for this year was **Jack C. Redman,** Albuquerque. Dr. Redman indicated his great pleasure at having been selected to receive the Award.

The Speaker called on **Dr. Carr,** President, for a report. Dr. Carr called to the attention of the delegates certain items in the Delegates' Handbook which should merit special consideration. He stated that the philosophy of the 1967 reports can be simply phrased: "Early and knowledgeable, coordinated and firm, professional and completely united advice to improve the health of New Mexico's citizens."

Dr. Woodward recognized Dr. Carr for the purpose of making a presentation to **Reginald Fitz, M.D.,** Dean, University of New Mexico School of Medicine. Dr. Carr presented a check for $3,711.19 to Dr. Fitz from the American Medical Association Education and Research Foundation (AMA-ERF).

Dr. Fitz expressed his deep satisfaction in receiving unrestricted gifts to the University which are not subject to review by any body or group and will allow implementation and development of new programs that have not been written into any fixed budget.

Dr. Fitz gave a most interesting oral **report on the programs of the School of Medicine,** covering the areas of: the medical students, the professional faculty and the building program.

Albert Schwichtenberg, Albuquerque, Chairman, AMA Council on National Security, reported on the **activities of the AMA Council.** Dr. Schwichtenberg informed the delegates that he presented testimony before Congress on behalf of the AMA concerning the doctor draft. He indicated that the AMA, in his testimony, recommended the broadening of the draft base to include foreign physicians until age 35 similarly to all other physicians, the inclusion of female physicians who now constitute about 7 per cent of the graduating classes, the drafting of osteopaths and eliminating service with the U.S.P.H.S. as fulfilling military draft obligation. He stated that this latter group now takes in about a thousand physicians a year, which the Council feels should not be obtained through the draft mechanism established to meet military requirements.

Speaker Woodward called for supplemental committee reports and resolutions. All supplemental reports and resolutions were referred to an appropriate reference committee.

The speaker appointed the following to membership on reference committees:

A. Administrative Matters:
John F. Griffin, Chairman, Albuquerque
Rex Quigley, Hobbs
Hoyt McClintock, Clovis
Melvin Lester, Alamogordo
U. G. Hodgin, Jr., Albuquerque

(Condensed and abstracted from the stenographic minutes kept by Mrs. Ralph R. Marshall. Reports referred to but not reproduced herein were distributed to all members of the House in mimeographed form. Copies of all reports are on file in the Executive Office of the Society and in the office of the Secretary of each component society, available for study by any member, and together with this abstract, present in full all proposals as well as actions taken upon them.)

B. Legislation and Public Affairs:
James R. Gay, Chairman, Albuquerque
Morton Dann, Roswell
Robert McComas, Las Cruces
John Smoker, Raton
Julius Wilson, Santa Fe

C. Miscellaneous Business:
Robert S. Grier, Chairman, Los Alamos
Howard Lawrence, Artesia
Isaac Terr, Las Vegas
Livingston Parsons, Albuquerque
Jesse Wallace, Tucumcari

Speaker Woodward stated that previous rulings of the House of Delegates have requested that Reference Committee reports be kept secret and not available to any members of the Society until one hour prior to the second session of the House. Because there was a day between sessions, it was the Speaker's opinion that it would be more convenient and beneficial to the consideration of important business of this House to make these reports available earlier. The House concurred in this opinion.

Dr. Robert Beaudette, Chairman, NEMPAC, announced that Senator Carl Curtis, from Nebraska, would be the banquet speaker for NEMPAC and invited all delegates to attend.

SECOND SESSION
May 20, 1967

The House was called to order at 3:00 p.m., Saturday, May 20, 1967, with sixty-eight delegates answering the roll call, including accredited substitute alternates.

Speaker Woodward appointed the following tellers for the election: **Don R. Clark,** Chairman, **J. Hunt Burress** and **C. H. Peterson.**

Report of Reference Committee on Administrative Matters

The following published reports considered by the Reference Committee were for information only, included no recommendations, and required no policy action, and were therefore orderd filed:

Delegate to American Medical Association, Annual and Supplemental Reports
Auxiliary to the New Mexico Medical Society
Council, Annual Report with Appendixes A and B
Mental Health and Alcoholism
Rocky Mountain Medical Journal
Advisory Committee to Selective Service
Grievance Committee, Supplemental Report

Appendix C of the Annual Report of the Council was disapproved and a substitute resolution was approved in lieu of the original resolution. The substitute resolution asks the Dean of the University of New Mexico School of Medicine to encourage residents and interns to tour the State with the officers, committee chairmen and Executive Secretary of the New Mexico Medical Society for the purpose of meeting practicing physicians in their natural environment. The interns and residents and their spouses will also accompany faculty members and officials of the Regional Program, with their expenses being paid by the Regional Medical Program or other suitable funds.

The Annual Report of the Grievance Committee was amended by omitting the names of the involved physicians and requesting that the future chairman of the Grievance Committee be advised to use anonymous terms such as "the complainant" or "the involved physician."

The Reference Committee requested that the President consider the advisability of having the "Purposes and Scope of the Grievance Committee" revised to include procedural guidelines.

Bernalillo County Medical Association sponsored a resolution pointing up the needs of the University of New Mexico School of Medicine Library and asking for the financial support of the membership in the amount of $10.00 per year. The Reference Committee was of the opinion that all members of the State Society should be apprised of the plans and potential of the School of Medicine Library, and that the project most certainly deserves the support of the Society and its members. The overwhelming majority of witnesses indicated a dissatisfaction with the proposal advanced by the Bernalillo County resolution; therefore, the Reference Committee recommended disapproval of the resolution, and the Committee's recommendation was sustained by the House.

The 1967-68 Budget, contained in the Supplemental Council Report, came in for much debate since the budget contained an item of $2,050.00 to be paid to the Education Account of the New Mexico Political Action Committee. The Reference Committee was of the opinion that there was considerable question as to the efficacy of the present program, that there was some room for evidence of a biased viewpoint by the NEMPAC, and that considerable argument could be advanced for the complete separation of NEMPAC and the activities of the New Mexico Medical Society, and recommended that the increased appropriation be disapproved. (Budget Committee recommended to Council $1,300.00 for NEMPAC and Council increased this request by $750.00). The recommendation of the Reference Committee was not sustained by the delegates by a vote of 24 in favor, with 39 opposed.

The Supplemental Report of the Council, with the exception of Item D—NEMPAC Budget, was approved and included:

a) That the five delinquent members be notified that if their dues are not paid by July 1, 1967, as provided in the Bylaws, Chapter 1, Sec. 3, they will be expelled from membership.
b) That Don L. Marketto, Las Cruces, be granted a year's extension of time to take the Orientation Course.
c) That Marcus Smith, be reappointed as Scientific Editor for New Mexico for the Rocky Mountain Medical Journal.
d) That the employment agreement with Mr. Howard Houk, Legal Counsel, be renewed for another year.
e) The employment agreement with Mr. Bob Reid, Public Relations Counsel, was not renewed for the reasons that the Council wished to centralize our Public Relations in Albuquerque rather than El Paso, and are also trying to anticipate the type of assistance needed in the future for the Executive Secretary.
f) Approved a budget anticipating $65,863.00 in income and expenses of $65,824.00.

The Reference Committee considered the invitation from Eddy County Medical Society for the Tenth Interim Meeting of the New Mexico Medical Society to be held in Carlsbad in November, 1968, and recommended approval of the invitation. The House approved the request.

Report of Reference Committee on Legislation and Public Affairs

The following published reports considered by the Reference Committee were for information only, included no recommendations, required no policy action, and were therefore ordered filed:

Adjudication and Liaison Committee to Health Insurance Carriers, Annual and Supplemental Reports.
Advisory Committee to the Department of Public Welfare
Legislation and Public Policy Committee
Public Health Committee
Public Relations Committee
New Mexico Physicians' Service Board

The Reference Committee recommended and the House sustained the request of the Reference Committee that the following recommendation of the Fee Committee be approved:

a) That the New Mexico Medical Society sign a letter of agreement with the Veterans Administration for fiscal year 1968 fees on the basis of the California Relative Value Index of 1961 with a coefficient of 5.5 unless the Veterans Administration agrees to our primary proposal for Usual and Customary Fees.
b) That the New Mexico Medical Society sign the Medicare ODMC Contract, overdue since April

1, 1967, only if the Contract fee errors noted elsewhere in this report are corrected to the satisfaction of the Fee Committee.

c) That the President, the Council and the Advisory Committee to the Department of Welfare be urged by the House to take whatever steps are appropriate to reinforce the Fee Committee's request that the DPW remove the highly undesirable quantitative restrictions on medical services available to DPW clients under Title XIX.

d) Concerning Title XVIII, Medicare Over 65, that all physicians be urged to "watchdog" the matters of fees and adjudications, and that any arbitrary failure to pay Usual and Customary fees be reported to the Adjudication Committee.

e) That the House of Delegates urge all members of the New Mexico Medical Society, through the *Newsletter*, to charge Usual and Customary fees to the Division of Vocational Rehabilitation for all services including Teachers Retirement Examinations, State Rehabilitation Training and Social Security Disability Determination examinations.

f) That a replacement on the Fee Committee, due to Dr. Paul Turner's departure from the state, be appointed by the President or by the Fee Committee if the President so orders, and that the appointee be either a pathologist, anesthesiologist or urologist, preferably from the northeastern quarter of the state.

g) Reminded the House that it had previously asked Blue Shield to resurvey the fee data used in the "Usual and Customary" fee system "at least every two years, or periodically as mutually agreeable to Blue Shield and the Medical Society, and that previous survey was accomplished during the months of February, March, April and May;" therefore requested that a new survey be accomplished during the year 1967, and that Blue Shield and Equitable Assurance Society of America be asked to help the Medical Society conduct such a survey.

The Reference Committee sponsored a special resolution, which was approved by the House, commending John J. Corcoran, Chairman, Fee Committee, and Fred Hanold, Acting Chairman, Adjudication and Liaison Committee to Health Insurance Carriers, and the members of each committee, for their diligent and fruitful efforts on behalf of the New Mexico Medical Society.

The Reference Committee substituted its own resolution for one introduced by the Santa Fe County Medical Society calling on the Board of Directors of Surgical Service to provide a means of assignment of benefits to non-participating physicians.

A resolution sponsored by Chaves County supporting AMA policy concerning prescribing drugs was disapproved, and a substitute resolution of the Reference Committee was approved which recommended that physicians be free to use either the generic or brand name in prescribing drugs and that physicians supplement medical judgments with cost consideration in making this choice.

Report of the Reference Committee on Miscellaneous Business

The following published reports considered by the Reference Committee were for information only, included no recommendations, required no policy action and were therefore ordered filed.

Accident Prevention Committee
Constitution and Bylaws Committee
Insurance Committee
Liaison Committee To Allied Professions
Liaison Committee to UNM School of Medicine
Medical-Legal Committee
Maternal and Perinatal Mortality Committee
Committee on Medicare for O.D.M.C.

The Reference Committee considered the Accident Prevention Committee Report at length and commented that the report reflected a great deal of useful and worthwhile effort and accomplishment and that its aims and purposes should be encouraged further.

There was discussion in the Reference Committee hearings regarding the council districts. It was the opinion of the Committee that presently the council districts are based on geographic and physical accessibility of the councilors to their constituents and that there seemed little to gain by redistricting on a physician-population basis.

The Reference Committee agreed with the statements made before the Committee by Dr. Reginald Fitz, Dean, UNM Medical School, that the work of the Liaison Committee to the New Mexico School of Medicine was valuable and that the accomplishments of the Committee have been mutually beneficial to the Medical School and the Medical Society.

The Medicine and Religion Committee recommended that a policy be established regarding continuity for the Chairman of the Committee, members of the Committee and Subcommittee members. The Reference Committee concurred in this suggestion and the Speaker announced that this suggestion would be transmitted to the President of the Society for his consideration. The Committee's request for a budget item was not considered inasmuch as this item was referred to a different committee for consideration.

The House unanimously approved the following resolution which was submitted by the Public Health Committee:

"The New Mexico Medical Society acknowledges and pays tribute to the very great services to New Mexico and to the medical profession, both in the areas of public health and the private practice of medicine, of Miss Myrtle Greenfield, former Director of the State Health Laboratory from 1920-1956, whose death March 12, 1967, ended a long and devoted career."

A resolution sponsored by William F. Blank, regarding the publicity practices of the National Institutes of Health, as evidenced by a news release in *U. S. News and World Report,* May 22, 1967, P. 12, was considered in Reference Committee at length. The original resolution was amended and modified with full concurrence, approval and assistance of Dr. Blank. The resolution, as amended and approved by the House, is as follows:

"WHEREAS, the New Mexico Medical Society has noted with concern certain publicity practices of the National Institutes of Health, which appear to misrepresent by claiming credit for advances in medical knowledge which antedate and could not spring from the activities of the NIH (as evidenced by news release in *U. S. News and World Report,* May 22. 1967, P. 12);

"WHEREAS, federally-subsidized programs involve large expenditures of money and energy and it is unethical to mislead the public as to productivity of these activities of government by such publicity practices;

"THEREFORE, BE IT RESOLVED that this Society express to the AMA for consideration its disapproval of such publicity releases by NIH; and

"BE IT FURTHER RESOLVED that this Society ask that the AMA critically examine existing and proposed federally-subsidized research programs as to purposeful direction and to review the publicity practices related to such programs and that a copy of this resolution be forwarded to the Senators and Congressmen from New Mexico."

R. C. Derbyshire was recognized by Speaker Woodward. Dr. Derbyshire said:

"Mr. Speaker, Fellow Delegates: For the first time in several years it is my pleasure to make some remarks about which I think there will be no disagreement and which are non-controversial. In 1952 a breath of fresh air came to New Mexico from Iowa in the form of Dr. Carr. When he moved to Albuquerque to establish a practice in internal medicine, he became an active part of the community and the medical community. From the time he moved to New Mexico he began to make outstanding contributions to the practice of medicine. Just four years ago a cloud fell over Dr. Carr's career when he had to undergo very serious surgery in Iowa. We are indebted to the skill of surgeons at the University of Iowa that Dr. Carr was able to recover and become our President last year. He soon resumed his activities in the Medical Society and in his practice, and I want to mention briefly some of the accomplishments and the contributions which he has made.

"Dr. Carr is an active member of the Board of Trustees of Southwest Blood Bank and has traveled extensively in support of these activities. For eight years he has been an active member of the New Mexico Board of Medical Examiners, and has made outstanding contributions from both a disciplinary and educational standpoint. He has been active on the Liaison Committee of the School of Medicine and has unceasingly worked to promote the Medical School and improve graduate education in New Mexico. He has served as Secretary-Treasurer of the New Mexico Medical Society and has been active as chairman or member of numerous important committees of the State Medical Society. He has been active on hospital staffs in Albuquerque and has served as President of both staffs. In addition to this, he has been an outstanding physician.

"There is only one fault I have found with Dr. Carr during my friendship with him. He has not learned to say 'no.' Every time you ask him to do something, no matter how hard-pressed he is, he is always willing to do it and always does what he says he will do.

"I feel honored that you have asked me to make these remarks. I hope he will learn to say 'no.' I hope we will continue to avail ourselves of his wisdom and experience."

Dr. Carr expressed his gratitude to the membership for the honor of serving in the office of President during the past year. He challenged the county societies to stimulate all physicians within their jurisdiction to become working active members in the Society.

Dr. Carr asked **Drs. Robert Beaudette and Earl Malone,** both Past-Presidents, to escort the new President of the Medical Society, **Emmit M. Jennings**, to the rostrum.

Dr. Jennings said,

"Mr. Speaker, Drs. Beaudette and Malone, our distinguished retiring President, Dr. Carr, Ladies and Gentlemen: It is with extreme pleasure, a bit of pride, and a great deal of humility that I stand here today to accept this great honor which you have bestowed upon me. I only hope that I can be worthy of your honor and trust for the next year. Folks, before starting my lengthy tirade, I would first like you to share with me the joy and honor of having with me today three of the people who put up with so much from me and are responsible for my being here — my mother, father and my wife. And I know exactly what you are going to say when you visit with them, "How did nice folks like you end up with a son like that?", or, "How did a beautiful girl like you end up with that for a husband?". Well, I'll tell you, it wasn't easy.

"I hope you will indulge me a few moments' time before we adjourn and allow me to reminisce a bit. I would like to tell you of a burning love affair I once had which may be in the throes of dying out. You know, I'm proud to be an American and not ashamed to tell you that my love affair is with my country. It also includes my work of being a physician to the sick in this great country of ours. But I'm not the least bit in love with the government of this country developing the idea of starting to tell me how I should treat the sick, who I can or cannot treat, and how much I will charge them for my services. And believe me, this is the road we are headed down if we for one minute relax our vigilance. Like it or not, doctors, you had better become interested in politics because the politicians are certainly interested in you.

"I believe that this country's medicine was made great by the free enterprise system of medicine, and I intend to do all I can to combat all inroads into our private practice by the government, although I must admit that at times I feel like I'm punching a bag full of air. However, I hope that all of you will remember that no one else can practice medicine, and if enough of us stand firm in our resolve to practice the best medicine available and avoid collaborating with government, our system of medicine will prevail. But if you stumble into their 'sweet pie' talk that government medicine isn't all bad and cooperate a little here, then a little there, then socialization of our profession and country will not be far behind. I throw out this challenge to you and hope when we look back ten years from now we will not be found wanting.

"Because of our need for continued progress and my need for guidance in combating ever-increasing inroads into our practice of medicine, and since medicine apparently cannot confine itself to medicine but must get involved in social, economic, and political aspects, I am asking all Past-Presidents of this Society to a meeting this summer in Cloudcroft—a summit on the summit — to discuss state and national problems of medicine and suggest methods for the direction of our Society. I hope that many of you will visit with one of these men between now and July so that we may have as many ideas as possible to discuss. We hope to report our suggestions to you at the Interim Meeting.

"Ladies and Gentlemen, I don't mind telling you that when I hear the Star Spangled Banner and see our flag being raised, my vision becomes a little blurry. We have the greatest country in the world and the best system of medicine, and as long as I have the honor and privilege to serve as your President, I will, with God's guidance, and your help, do all possible to preserve the free enterprise practice of medicine."

The House rose in a spontaneous applause following Dr. Jennings' acceptance speech.

The Speaker, Dr. Woodward, called on Don Clark, Chairman of the Tellers, for a report.

Dr. Clark announced the following election results:

President-Elect _____Earl B. Flanagan, Carlsbad
Vice-President ___Hugh B. Woodward, Albuquerque
Secretary-Treasurer __John D. Abrums, Albuquerque
Speaker, House of Delegates _____Ronald Dorn, Albuquerque
Vice-Speaker, House of Delegates _____Harry Ellis, Santa Fe
Councilor, District III _George Boyden, Albuquerque
Councilor, District VI _____Richard Sherman, Alamogordo
General Convention Committee _____Robert Stone, Albuquerque
Rufus Lee, Los Alamos
New Mexico Physicians' Service ____George Boyden, Albuquerque
William Hossley, Deming
Robert McComas, Las Cruces
John Smoker, Raton
C. H. Peterson, Carlsbad

Nominating Committee:
District I _____R. P. Beaudette, Raton
District II _____Marcus Smith, Santa Fe
District III _____Tom L. Carr, Albuquerque
District IV _____George Prothro, Clovis
District V _____C. Pardue Bunch, Artesia
District VI _____William Hossley, Deming
District VII _____John McCulloch, Farmington

There being no further business to come before the House, the Speaker declared the Eighty-fifth Annual Meeting of the House of Delegates adjourned without day.

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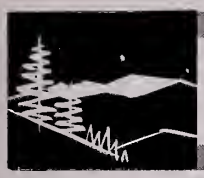


COLORADO

AMA Volunteer Physicians for Vietnam Program

Every month, 16 American physicians donate two months of their time and services to help meet the health care needs of the South Vietnamese civilian population.

Serving in South Vietnamese civilian hospitals under the AMA Volunteer Physicians for Vietnam program, they replace 16 physicians who are rotated home every month after having served two months as volunteers. Thirty-two physicians are in South Vietnam at all times under auspices of the program.

Dr. James R. Leake of Littleton, Colorado was among the latest group of physicians to leave for South Vietnam under this program.

A serious shortage of native physicians exists in South Vietnam. Of the approximately 1,000 Vietnamese physicians nearly 900 are in the armed forces, leaving only about 100 to care for the health needs of 16 million people.

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

The Adrenal Cortex: Edited by Albert B. Eisenstein. Boston, 1967, Little, Brown. 685 p. Price: $22.50.

Applied Gynecologic Pathology: By Joseph E. Hall. N. Y., 1963, Appleton. 404 p. Price: $12.00.

A Biological Consideration of Treatment of Breast Cancer: By George Crile, Jr. Springfield, Ill., 1967, Thomas. 189 p. Price: $8.00.

Biological Treatment of Mental Illness: Edited by Max Rinkel. N. Y., 1966, L. C. Page. 1025 p. Price: $25.00.

Cardiac Surgery: Edited by John C. Norman. N. Y., 1967, Appleton. 603 p. Price: $15.00.

Conjoined Twins: The National Foundation. N. Y., 1967, The Foundation. 147 p. Gift.

Contact Dermatitis: By Alexander A. Fisher. Philadelphia, 1967, Lea & Febiger. 324 p. Price: $15.00.

The Empty Fortress: Infantile Autism and The Birth of The Self: By Bruno Beetelheim. N. Y., 1967, Free Pr. 484 p. Price: $9.95.

Lower Urinary Fistulae in The Female: By E. L. F. McConnachie. Springfield, Ill., 1966, Thomas. 159 p. Price: $10.75.

Manual of Preoperative and Postoperative Care: By American College of Surgeons. Philadelphia, 1967, Saunders. 506 p. Price: $8.50.

Ophthalmic Pathology: Edited by Michael J. Hogan. 2d ed. Philadelphia, 1962, Saunders. 797 p. Price: $30.00.

A Psychiatrist For A Troubled World: By William Menninger. N. Y., 1967, Viking. 871 p. Price: $12.00.

Psychoanalysis; A General Psychology: Edited by Rudolph Loewenstein. N. Y., 1966, International Univ. Pr. 684 p. Price: $15.00.

Psychoanalysis and Male Sexuality: Edited by Hendrik M. Ruitenbeek. New Haven, 1966, College & University Pr. 268 p. Price: $5.00.

A Textbook for Medical Assistants: By M. Murray Lawton. St. Louis, 1967, Mosby. 465 p. Price: $8.85.

Book Review:

System of Ophthalmology: Volume IX, Diseases of the Uveal Tract: By Sir Stewart Duke-Elder and Edward S. Perkins. St. Louis, 1966, Mosby. 978 p. Price $44.50.

This welcomed volume is a new creation supplanting the 447-page portion on the uveal tract in Duke-Elder's **Textbook of Ophthalmology** (1941). Prof. Perkins, noted for his experimental studies in the field, has collaborated with Duke-Elder in its preparation.

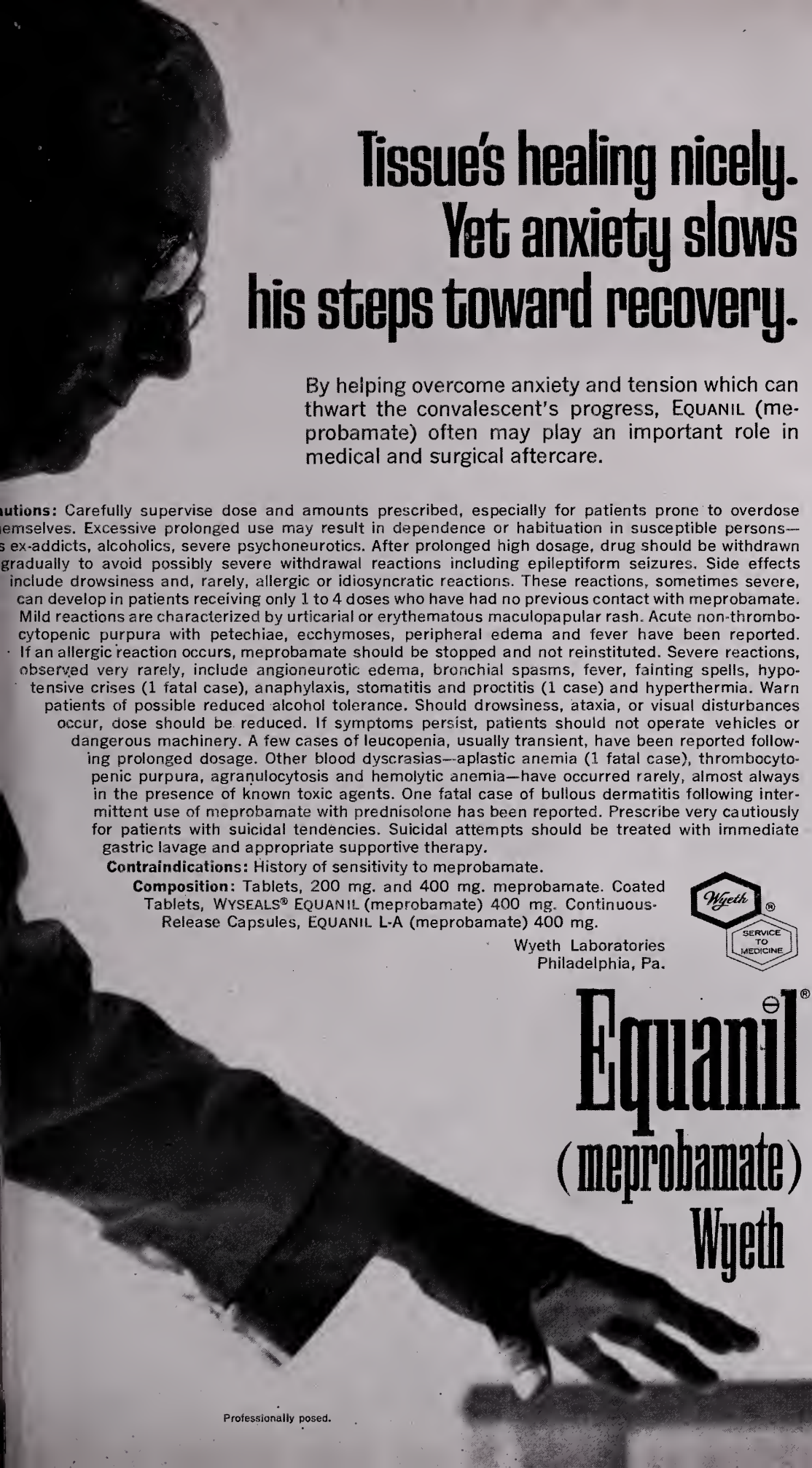
The comprehensive sections of the book include the anatomical, physiological and healing characteristics of the uveal tract, disturbances of circulation, inflammations (uveitis), uveal manifestations of systemic diseases, atrophies and degenerations, cysts and tumors, and cilio-choroidal detachments.

The chapter on uveitis includes recent developments on hypersensitivity and auto-immunity. The section on clinical signs, symptoms and diagnosis of uveitis has been enlarged almost four times incorporating the changed concepts of its cause and treatment and the discoveries and advances of the past twenty-five years.

The lucid text is enriched by a generous quantity of good-quality illustrations, many in real-life color. This volume with its wealth of useful information is of value to every ophthalmologist.

M. B. RIDER, M.D.

"THEY HARDLY SEEM LIKE HOSPITALS NOWADAYS."



Tissue's healing nicely. Yet anxiety slows his steps toward recovery.

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MEETINGS

American College of Chest Physicians

INTERIM CLINICAL MEETING, Warwick Hotel, Houston, Texas, November 25-26, 1967

This meeting will consist of a two-day scientific program with round table discussions and fireside conferences. A highlight of this program will be a panel discussion held at the NASA Manned Spacecraft Center.

For a copy of the program and other details please write to the Executive Office of the American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois 60611.

* * * *

Hahnemann Medical College and Hospital Future Meetings

General Internal Medicine

Oct. 4, 1967 through March 27, 1968—Wed. 1-4 p. m.
Directors: Wilbur W. Oaks, M.D., Daniel Mason, M.D., Sheldon R. Bender, M.D.
Hahnemann Medical College

A Current View of Congestive Heart Failure
Nov. 13-14, 1967
Director: Albert N. Brest, M.D.
Sheraton Hotel

Human Sexual Function and Dysfunction
Nov. 17-18, 1967
Director: Paul Jay Fink, M.D.
Marriott Motor Hotel

Psychodelic Drugs
March 18-20, 1968
Director: Paul Jay Fink, M.D.
Marriott Motor Hotel

Pre- and Postoperative Management of the Cardiopulmonary Patient
April 8-10, 1968
Directors: Joseph F. O'Malley, M.D., Wilbur W. Oaks, M.D.
Marriott Motor Hotel

Auscultation of the Heart
May 27-31, 1968
Directors: William Likoff, M.D., Bernard L. Segal, M.D.
Sheraton Hotel

Psychiatry in Internal Medicine
Nov. 18-20, 1968
Directors: Paul Jay Fink, M.D., Wilbur W. Oaks, M.D.
Sheraton Hotel

For further information concerning these meetings, contact the Director.

American College of Physicians

The American College of Physicians (ACP) will hold a regional scientific meeting for specialists in internal medicine in Montana and Wyoming on Sept. 30. The meeting will be held in Casper, Wyo. The Montana-Wyoming meeting is one of some 35 scientific-educational meetings sponsored during the academic year by the ACP. Held throughout the United States and Canada, the meetings help keep the College's 13,600 members abreast of new developments in the basic sciences and clinical medicine.

For further information, contact Alfred H. Fulton, Jr., M.D., 3120 W. MacDonald Dr., Billings, Montana 59102.

* * * *

American College of Surgeons

The American College of Surgeons will hold its first of three 1968 Section Meetings in Dallas, Feb. 19-21. More than 400 surgeons are expected to attend this concentrated, three-day program, open to all doctors of medicine. This is the first ACS meeting in Dallas since 1958. Headquarters will be the Statler-Hilton Hotel.

Under the chairmanship of Dr. Robert S. Sparkman, Dallas, the local advisory program committee has planned an intensive series of panels, "How-I-Do-It" Clinics, symposia, scientific papers, and films designed to inform the medical profession at large about developments in surgery.

* * * *

Third Annual Clinical Cancer Conference

The Cancer Research Institute, in cooperation with the Department of Surgery and Continuing Education in the Health Sciences, University of California San Francisco Medical Center, is presenting a two-day conference November 11-12, 1967. It is co-sponsored by the California Division of the American Cancer Society and the Cancer Committee of the California Medical Association.

This conference has been designed specifically to review and report information concerning cancer problems in clinical practice as encountered by the general practitioner as well as the specialist. It will be presented by authorities in the field of diagnosis and treatment in a wide variety of oncologic problems with special emphasis on recent advances in diagnostic and therapeutic procedures.

For further information concerning this conference, contact Dr. Maurice Galante, University of California San Francisco Medical Center, San Francisco, Calif. 94122.

fall 1967

DORSEY Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska. Address communications to Raymond C. Pogge, M.D., Director of Medicine.

this issue: smog, smaze or smust...

Smog, smaze or smust...effects of air pollution on upper respiratory tract

Nathan Flaxman, M.D., Diplomate, American Board of Internal Medicine, Chicago, Illinois

In Los Angeles it is *smog* (smoke and fog). In New York City *smaze* (smoke and haze). In El Paso *smust* (smoke and dust). The original factor was smoke plus such natural phenomena as fog, haze and dust, but air pollution has mushroomed from a smoke problem in our industrial cities into a major economic, esthetic and public health problem that affects practically every American locality and citizen.[1,2] Respiratory disease, of course, is by far the most costly effect of air pollution, for contaminated air can aggravate our illnesses, deplete our strength and shorten our life span.[1]

The greatest problem in dealing with solid wastes is that they are not quickly returned to dust. To aid the decomposing process, the great bulk of such waste is burned, polluting our air in the process.[3] Dr. Jack McKee of the California Institute of Technology[4] has calculated that in Los Angeles County, which has more than six million people, about three pounds of gaseous wastes per person per day (on a dry-weight basis) enter the atmosphere. This is twice as much as solid refuse disposal and six times as much as the contaminants in waste water. It is estimated that in New York City, 730 pounds of pollutants, a little over half the size of a compact two-door sedan of foreign make, is annually thrown into the air for each man, woman and child in the city.[5]

Air pollution is an evident factor, not only in the common cold and upper respiratory disease, but also in chronic bronchitis,[2] pulmonary emphysema,[6] bronchial asthma,[7] pneumonitis and lung cancer.[8] Its effect on the incidence of pulmonary tuberculosis is unproved,[9] although it is conceivable that the presence of various materials polluting the air migh do this. A siege of smog in Denver, the "mile hig city," in December 1965 was accompanied by resp ratory infection that doubled normal absentee rat in schools, factories and city government.[10]

While air pollution is only one factor, it has becom important in the causes of most of the afflictions c the respiratory tract. This has been shown not on by the Denver occurrence, but also by detailed stud of respiratory illness in a small group of 313 me

rom October 1962 to May 1963 when there were 02 episodes involving the upper respiratory tract. The attack rate of illness was related in time to increased concentration of both smoke and sulphur ioxide in the atmosphere of the district in which ne men lived.

)ther factors often mentioned, include exposure to nose who have colds, exposure to extreme changes f temperature, allergy and bacterial infection. Iowever, when low individual resistance due to ack of rest, overwork, fatigue, improper or unbalnced diet, previous illness and emotional stress are ncluded as causes, we enter the realm of somewhat bscure relationships. Much more emphasis can be laced on the role of polluted air.

ne symptoms, signs and complications of involvement of the upper respiratory tract, especially the ommon cold, are the same regardless of the causave factor. Swelling of the lining of the nose, the ratchy dry throat, the discharge from the nose at rst watery then thicker, discolored and more tenaous, the eyes tearing, and frequent sneezing are l part of the Number 1 human ailment. Concurnt or residual sinusitis when mucus is trapped ere, middle ear involvement due to interference ith drainage, laryngitis and bronchitis are complitions of the common cold. The primary interfernce is with a most important function of the nose—e cleansing of foreign matter in the first line of ir defense" to prevent it from entering the breathg tract.

owever, the diagnosis and subsequent decision on w to treat the patient so affected rests basically on e relief of symptoms that cause him the misery. ne stuffed, runny nose, the clogged ears, and the rsh dry cough—all the symptoms that make comon cold sufferers feel miserable and interfere with eir sleep—can be alleviated with medications of e oral nasal decongestant/antihistamine combinan type. The burning sensation in the throat, soreness of the chest and even chest pain can also be relieved by such medication. Rest in bed if there is fever (but confined to home at least), liberal fluids, uniformly warm surroundings and adequate humidity in the room, are all helpful adjuncts to the medication. Most common cold sufferers recover rapidly and are symptom-free in four to ten days.

Further treatment, altered by the fact that the affliction hangs on for more than the usual duration of the common cold, requires consideration of allergy, which is most frequently the prolonging factor. But air pollution itself may often be the culprit.

(Concluded on following page)

For nature's hazards:
nasal congestion
due to seasonal
allergies and
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Triaminic® *syrup*

Each teaspoonful (5 ml.) contains:

Phenylpropanolamine hydrochloride	12.5 mg.
Pheniramine maleate	6.25 mg.
Pyrilamine maleate	6.25 mg.

For nasal congestion regardless of cause, you can bring quick, lasting comfort to your little patients with Triaminic Syrup. You may occasionally encounter these *side effects:* drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. *Precautions:* the possibility of drowsiness should be considered by patients engaged in mechanical operations requiring alertness. Use with caution in patients with hypertension, heart disease, diabetes, or thyrotoxicosis.

(Advertisement)

At the Third National Conference on Air Pollution held recently, it was emphasized that this subject had received more attention in the past four years than in all previous history. Spicer,[11] an active participant at this conference, reiterated that it behooves the practicing physician to be aware of trends in respiratory disease and to accept a major role in community action relating to air pollution and respiratory health. By taking a positive stand physicians have been instrumental in the development of anti-pollution legislation. An outstanding example is Los Angeles where major steps have been taken by abolishing coal burning, and even banishing oil burning, seven months a year. Natural gas must be used instead and it must be used by industry when available. Backyard incinerators have been abolished in favor of landfill disposal, and building incineration ended except for a few expensive smokeless furnaces.[10] Concerted action can be taken against particular industrial nuisances. One company that disregarded complaints discovered its error when thousands of its credit cards were returned by irate customers who decided to patronize competing companies.[12]

Summary. Respiratory disease is the most important and most costly effect of air pollution, whether termed smog, smaze, or smust. Air pollution is an economic, esthetic and public health problem that affects practically every American locality and citizen. New sources of air pollution are invisible and odorless, but the harmful gases and liquid droplets are there. Triggered by sunlight, some of these undergo mid-air chemical changes and the results are even more irritating to the upper respiratory tract. The symptoms, signs and complications, especially of the upper respiratory tract, can be readily aborted by modern medication but may be unduly prolonged by polluted air. In steps taken to prevent this, the practicing physician can take a major role.

References 1. Anderson, R. J. Air Pollution, Respiratory Disease and the NTA, W. Virg. M. J., 60:332, 1964. 2. Angel, J. H., Fletcher, C. M., Hill, I. D., and Tinker, C. M. Respiratory Illness in Factory and Office Workers, Brit. J. Dis. Chest, 59:66, 1965. 3. Waste Disposal Problems Grow, Current Municipal Problems, 8:218, 1966. 4. McKee, J. quoted by Hills, G. U.S. War at Home-Fight Against Smog, Chicago Tribune, Sept. 26, 1966. 5. NYC Task Force Revives Concern on Air Pollution, Med. Trib. 7:23 (Sept. 17-18) 1966. 6. Flaxman, N. Pulmonary Emphysema, Med. Trial Tech. Quart. 1960 Annual, p. 221. 7. Heimann, H. Air Pollution and Respiratory Disease, Ann. Allergy 21:396, 1963. 8. Flaxman, N. Pneumonitis and Lung Cancer, Med. Trial Tech. Quart. 1965 Annual, p. 185. 9. Flaxman, N. Pulmonary Tuberculosis, Occupation and Trauma, Med. Trial Tech. Quart. 1959 Annual, p. 237. 10. Hill, G. U.S. War at Home-Fight Against Smog, Chicago Tribune, Sept. 26, 1966. 11. Spicer, W. S., Jr. Relation of Air Pollution to Disease, Arch. Environ. Health, 9:600, 1964. 12. Henderson, C. F. What You Can Do To Combat Air Pollution, Parents' Mag. 41:76, 1966.

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Phenylpropanolamine hydrochloride	50 mg.
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Side effects: Occasional drowsiness, blurred vision, cardiac palpitation, flushing, dizziness, nervousness or gastrointestinal upsets.

Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

(Advertisement)

Colorado Delegate's Report of the Annual Convention of The American Medical Association, June 18-22, 1967 held in Atlantic City, New Jersey

The 116th Annual Convention of the American Medical Association, held in Atlantic City June 18-22, 1967, was productive in all respects. The scientific program was outstanding, the Association's business was conducted in an efficient and democratic manner, and the social events were helpful in creating a friendly and cooperative atmosphere. Most of the hotels in Atlantic City had been remodeled and the many new motels made this the most comfortable meeting for the AMA in Atlantic City for many years.

Two hundred forty-two, or 100 per cent of the 242 delegates, were in their seats for both the Tuesday and Wednesday deliberations. Thursday, the final day, attendance still stood at 240. There was a total registration of 38,690; of these, 11,955 were physicians.

All told, the House was presented with 151 items of business on which action had to be taken, including a record total of 123 resolutions from state medical associations; 18 reports from the Board of Trustees, three of which were nominations to fill Council positions; 4 reports from the Council of Medical Service; 3 reports from the Council on Constitution and Bylaws, one produced during the convention in order to implement an adopted resolution; 2 reports from the Council on Medical Education; and 1 report from the Judicial Council nominating affiliate members of the Association.

This seemed like a great deal of business for one session, but when Dr. Rouse told us of the British Medical Association having 600 resolutions at their meeting following ours, it was obvious that our association was either better organized or slow.

The House unanimously chose Dr. Dwight L. Wilbur of San Francisco, "a liberal conservative" by his own definition, as President-elect, and elected to a vacant post on the Board of Trustees, Dr. Edward R. Annis of Miami, who Modern Medicine says is "the voice of organized medicine." Both were excellent selections, will be very effective, and have long been friends of Colorado.

Dr. Irvin Hendryson, "our own Chief," was again elected to the Board of Trustees and welcomed by deafening applause. It was obvious that he was the most popular candidate of the day, and many of us veterans think of the decade.

A list of all successful candidates, as it appears in the minutes, follows:

Dwight L. Wilbur, M.D., San Francisco, California, was elected President-elect. Dr. Wilbur has been a member of the Board of Trustees since 1963. He will serve in his new capacity for one year and will be installed as the Association's 123rd President at its annual convention in his home city in June, 1968.

Malcolm E. Phelps, M.D., El Reno, Oklahoma, who has been field director of the Volunteer Physicians for Vietnam Program, was elected Vice President of the Association.

Walter C. Bornemeier, M.D., Chicago, Illinois, was re-elected Speaker of the House and Russell B. Roth, M.D., Erie, Pennsylvania, was re-elected Vice Speaker of the House.

Four Trustees were elected to succeed themselves: Wesley W. Hall, M.D., Reno, Nevada; Irvin E. Hendryson, M.D., Denver, Colorado; Alvin J. Ingram, M.D., Memphis, Tennessee; and Robert C. Long, M.D., Louisville, Kentucky.

Edward R. Annis, M.D., Miami, Florida, was elected to complete the term of the Board of Trustees vacated by the death of Homer L. Pearson, M.D., Miami, Florida; and Burt L. Davis, M.D., Palo Alto, California, was elected to complete the term as Trustee vacated by the resignation from the Board of President-elect, Wilbur.

Thurman B. Givan, M.D., Brooklyn, N. Y., was elected to succeed himself on the Council on Constitution and Bylaws.

Earle M. Chapman, M.D., Boston, Massachusetts (succeeding himself), and Vernon E. Wilson, M.D., Columbia, Missouri, were elected to the Council on Medical Education.

George W. Slagle, M.D., Battle Creek, Michigan, was elected to succeed himself on the Council on Medical Service.

On the nomination of President Rouse, Elmer G. Shelley, M.D., North East, Pennsylvania was elected to succeed himself on the Judicial Council.

The American Medical Association's Distinguished Service Award was presented by the House of Delegates to Dr. E. W. Alton Ochsner of New Orleans, Louisiana. His warmth, energy, and many achievements are familiar to every physician in the nation. Al is undoubtedly the most popular selection that the House has ever made for this honor.

In beautiful surroundings at his Tuesday evening inauguration as the Association's 122nd President, Milford O. Rouse, M.D., Dallas, Texas, pointed out that "The federal government is making its moves into areas where, to its own satisfaction at least, it is able to demonstrate unfilled needs for health care or health care planning. If we are alert to our responsibilities for filling all of the apparent vacuums in community-wide health programs, we can eliminate areas which may seem to demand government involvement.

"Leadership will be provided," Dr. Rouse said, "in these areas of community planning and the provision of community health services for all

people. The only undefined factor is the source of that leadership. If it is not the physicians of the community, it will be government in one of its many forms."

President Rouse listed some of the many problems now facing the medical profession, asserting however, that "this is a time not for despair, but for a clear recognition of crises that are approaching; a time not for anger and frustration, but for unswerving determination to face our problems and solve them; a time not for philosophy alone, but for action to make our philosophy a reality."

In his report to the House Thursday, President Rouse elaborated on that theme and listed what he considers to be some of the solutions to the problems facing medicine. Among the items he included were more unity within the medical profession; greater interprofessional harmony with all other elements of health care; better communications between physicians and their societies at every level, and between physicians and the public; increased participation by physicians in the deliberations and programs of the medical associations; more activity by physicians in the political and civic affairs of their communities; and the development of citizen interest in matters of over-all health.

"As we have done in the past," the President told the House, "we shall gladly respond to requests from government or from any other source for advice on health matters—But, as in the past, we shall insist that we be approached in good faith, with the assurance that our freedom of judgment and freedom of action will be preserved.

"Our future," he concluded, "will not be determined by those who oppose us, but by our own willingness to accept the responsibilities which are naturally ours."

Actions of the House

The House, in what many think was its most significant action, enacted the Association's first major policy change on therapeutic abortion in ninety-six years. They actually up-dated the Association's 1871 policy on the subject which, according to the Reference Committee report, was not only antiquated, but lacked even the rudiments of adequate safeguards to prevent abuse.

The Reference Committee called upon Dr. Myron Waddell, our President, for help and advice. He felt that the report varied little from what our Legislature had adopted at its last session. The up-dated policy, the House agreed, contains necessary safeguards and permits the physician to exercise his personal conscience and judgment in the best interest of his patient, over-riding objections in any medical decision.

The following was established as policy of the American Medical Association: ". . . Recognizing that there are many physicians who, on moral or religious grounds, oppose therapeutic abortion under any circumstances, the American Medical Association is opposed to induced abortion except when:

"(1) There is documented evidence that continuance of the pregnancy may threaten the health or life of the mother, or

"(2) There is documented medical evidence that the infant may be born with incapacitating physical deformity or mental deficiency, or

"(3) There is documented medical evidence that continuance of a pregnancy, resulting from legally established statutory or forcible rape or incest may constitute a threat to the mental or physical health of the patient;

"(4) Two other physicians chosen because of their recognized professional competence have examined the patient and have concurred in writing; and

"(5) The procedure is performed in a hospital accredited by the Joint Commission on Accreditation of Hospitals.

"It is to be considered consistent with the principles of ethics of the American Medical Association for physicians to provide medical information to state legislatures in their consideration of revision and/or the development of new legislation regarding therapeutic abortion."

Editorially speaking, I am inclined to agree with Dr. Joseph Donnelly of Jersey City, N. J. The office hours of the obstetrician will get "longer and longer" and the time in the delivery room "less and less." I like for Colorado to be first most of the time, but we have usually taken the leadership in more constructive legislation.

Medicine and Osteopathy

For 10 years the House has tried to work out a fair stand on the medical profession's relationships with osteopathy. Their original committee was headed by Dr. Sam Newman, our stalwart, who has been greatly missed, but I hear will be back soon. We are sure that this report was in accord with Sam's basic thinking. All have long agreed that the issue today between Medicine and Osteopathy no longer is cultism versus science, but rather "one level of medical education and practice as opposed to another level of education and practice."

The House adopted the following recommendations of the Board regarding the medical profession's relationships with osteopathy:

1. Authorize the Board of Trustees to begin promptly negotiations directed toward beginning official change of schools of osteopathy to schools of medicine. (It is understood that funds from the American Medical Association will be required to conduct these negotiations, and assistance in identifying and securing additional funds from other sources to support efforts toward changing the schools.)

2. Authorize the Council on Medical Education to undertake negotiations to establish means by which selected students with proven satisfactory scholastic ability in schools of osteopathy may be considered by schools of medicine for transfer into medical school classes.

It is conceivable that this position may not be free of error, but with the man-power shortage in medicine and allied fields, these men could be better evaluated and placed than many of our much sought-after and over-utilized foreign medical school graduates.

Diploma Nursing Supported by AMA

The shortage of working nurses has long been of concern to all of us, so the AMA reaffirmed its support of all nursing education programs and adopted the following statement on nursing education:

WHEREAS, The American Medical Association is on record to "continue its support of ALL current nationally approved educational programs for nurses;" and

WHEREAS, The national trend which is supported by the professional nurses' associations appears to be the gradual phasing out of the diploma schools of nursing and the transfer of nursing education to collegiate institutions; and

WHEREAS, 70 per cent of nursing care at the present time is rendered by graduates of diploma schools with the demand for such nurses continuing to exceed the supply; and

WHEREAS, there is general professional agreement on the need for inclusion of nursing education in community health planning with provision for greater use of in-hospital training as well as training in collegiate institutions, therefore, be it

RESOLVED, That the American Medical Association reaffirms its support of all forms of nursing education including baccalaureate, diploma, associate, and practical nurse education programs; and be it further

RESOLVED, That those hospitals that conduct diploma schools of nursing be commended for the great contribution being made by these institutions to the health needs of the nation; and be it further

RESOLVED; That such hospitals be urged to continue their schools and increase enrollment while allowing the individual to choose the kind of nursing education he or she desires; and be it further

RESOLVED; that the American Medical Association take appropriate action in consultation with professional nurses' associations and the American Hospital Association to encourage increasing enrollment in diploma schools and at the same time improve educational standards.

Many of us are not aware of the efforts that the AMA, through its Council on Allied Professions and its Committee on Nursing, is doing to augment the supply of nurses and the quality of nursing education. For three years the Division Head, Dr. A. N. Taylor, and his Associate Director, Ann Sparmacher, R.N., have held National Conferences of Physicians and Professional Nurses jointly with our AMA Committee on Nursing. These meetings are productive, and are leading to a much better and, I hope, more productive relationship.

In reality, the AMA action deplores the gradual phasing out of hospital diploma schools in the face of a projected shortage of some 50,000 registered nurses by 1969, and the prospects that 59 more hospitals will close their nursing schools next year.

Health Care Cost

"Today the ability of the physician to serve his patient is being handicapped by the rapidly rising prices of the various components of health care." That is a statement from the Board of Trustees report adopted by the House with the provision that it be widely disseminated for study and evaluation as to its applicability in local areas.

"Indeed," the report continued, "if the price of health care continues to outrun slower increases in consumers' income, the problem of medical indigency will assume alarming proportions."

Basic problems in the over-all design of the nation's health care system, as shown in the adopted report, include inadequate numbers of new physicians and shortages of other individuals trained to function as part of the health care team, the present organization and management of the nation's hospitals, with respect to their "privilege of automatically translating all higher costs into higher prices" which "must now be questioned;" diagnostic and therapeutic care outside of a hospital; and legislation in the health field.

A number of actions were taken to outline possible solutions to the problems of higher health care costs. One important one was the adoption of a progress report on strengthening and improving voluntary health insurance programs, submitted by the Council on Medical Service. The House accepted the Council's statements that it would "continue to study the scope and patterns of benefits, public demands for coverage, the performance of health insurance and prepayment programs and accumulation of data for future use;" and that the Council would "proceed to develop guiding principles for health insurance and prepayment programs."

As further efforts in this direction, the House referred to the Board and to the Council on Medical Service a resolution that the AMA "consult with insurers in an effort to change their policy of insurance coverage so that payment can be made for diagnostic procedures and minor surgery performed in the physicians' office and/or in the hospital out-patient department;" adopted a resolution that the Association petition Congress to remove the restriction on first-dollar deduction from income tax laws for health care expenditures; and adopted the over-all policy that "physicians—continue to do everything possible to help the public conserve its health care dollars."

Subjects of considerable interest to the delegates and their constituents were the Millis Commission Report (Citizens' Commission on Graduate Medical Education), and the report of the Trustees' Commission on Research. It was agreed that both relate so specifically to the roles of the Councils on Medical Education and Medical Service, the two councils have assumed responsibility for assembling critiques and information. At a later date, they will bring to the Board, and subsequently to the House, recommendations for implementation of parts or the whole of the report. The House urged all interested members of the Association or groups to submit comments, suggestions or recommendations for consideration by the two councils.

With respect to the Commission on Research, the Board has established a Committee on Research to review reports on the subject from the Councils on Medical Education and Medical Service; refer portions of the report to other councils and committees; and confer with those groups in addition to receiving their reports.

Again, the House urged any interested individuals and groups to forward comments and suggestions to the Executive Vice President for transmittal to the Committee.

These both are excellent reports with some pitfalls, so it does behoove the House to see what the potential impact of the report upon what we now have in graduate medical education might be.

Government Health Programs

As might be expected, a great many reports and resolutions dealt directly with the Association's relationships with government, and with the multitude of government health programs, existing or proposed, in the health field. These have been managed differently in many sectors of the country.

Because of our experience here with a Poverty and Health Program, planned and established without consultation or any cooperation with the medical society, this report should be of great interest to the physicians of Colorado and especially of Denver.

The House re-affirmed Association policy that "The medical profession has long and consistently held to two basic positions concerning personal health care and its financing: that no one should go without needed care because of inability to pay, and that responsibility for payment rests first on the individual himself and then, to the extent that he is unable to pay, on his family, the community, the county, the state, and to the extent that lesser levels of government are unable to finance the care, the federal government."

Regarding the Title XIX program, the House made it policy that "the medical profession should now take a firm stand in support of the Title XIX approach in improving the health and the delivery of health care services to the needy of the nation."

Recommendations adopted by the House are that the medical profession take a strong stand in support of implementation of Title XIX "while still seeking such changes in the federal legislation and/or regulations as will improve this program; that it urge organized medicine to take a leading role in formulating and directing Title XIX programs at the state and local level . . . and that it incorporate in such planning the use of existing voluntary mechanisms and private insurance carriers, wherever feasible, utilizing the usual and customary fee principle, thus bringing within the mainstream of present medical care systems the provision of quality health care for all Americans."

Appalachian regional health programs were the subject of a number of resolutions and the House adopted the following guidelines for setting up any such programs: (1) demonstrated need for the proposed project; (2) local control; (3) participation of a significant proportion of local physicians in planning and development of the project; (4) the operation of any regional, area or county health service facility shall not infringe upon the private practice of medicine; (5) all health services, whether preventive, prophylactic or therapeutic, shall be rendered at a cost to the patient commensurate with the social and economic status of the patient; (6) there shall be adequate medical representation on all national, state and local bodies having supervision or jurisdiction in the development and/or operation of such health service facilities; (7) these health service projects shall in no way be developed, operated or influenced in any manner which could lead to a government-controlled system of medical practice.

More generally, in connection with any and all government medical care programs, guidelines were adopted by the House:

"The medical profession in any community is best represented by the local medical society and its officers. They should be consulted initially, and during the process of planning of any and all projects for the care of the sick and the preservation of health." (These are significant).

In proposing any new facility, "It shall be first determined that existing facilities are so inadequate that only a completely new facility will provide a solution.

"The responsibility for the health needs of a community basically resides at the community level, and all the local resources . . . shall be examined before the community accepts government monies.

"If it is deemed advisable to operate a government-financed facility in a community, it shall in no way be binding upon a physician to refer his patients there; to coerce a physician to service the facility; and this facility must in no way infringe upon the private practice of medicine.

"These projects should not be developed or operated in such a manner as to establish a precedent that could lead to a governmental controlled medical care system in this country."

We have a bright light in Colorado, a Welfare Director whom we should support in her past and present efforts.

Race Quotas

We are all aware of the difficulty southern physicians experience in complying with the "race quota system imposed on doctors and hospitals by HEW. The Public Health Service representative denied that such a system had been established. The southern physicians, with a great deal of support from many other areas, opposed the establishment of a racial quota system for hospitals.

The resolution adopted by the House accused the HEW of using sick people to carry out social reforms. It implied that this practice was detrimental to good medical care, and any effort to set hospital admissions by race quota system could deny the patient free choice of physician and hospital.

Physician Control Over Collection and Disbursement of Professional Fees

In adopting a report of the Council on Medical Service regarding collection and disbursement of professional fees, the House reaffirmed past action and provided clear, consistent policy statements reflected in these thoughts which are elaborated in the full report:

1. It is proper for the physician to establish the fee he charges to any patient for professional service rendered, with the recognition that a duly constituted committee of his peers may appropriately review and pass upon the equity and justice of his charge.

2. It is proper for third party agencies to make payment of professional medical fees for patients.

3. It is proper for a physician to work with other physicians in a team approach to the provision of medical service, recognizing that each is entitled to compensation according to the value of his services and that charges attributable to each physician's service shall be made clear to the patient.

4. It is proper for a physician who provides personal supervision and direction for a physician-in-training to charge for the professional medical service rendered.

5. A physician should not enter into a contract or agreement with a hospital whereby the hospital acts as the agent for him unless it is with the consent of the physician and of the medical staff.

6. Physicians, collectively in hospitals, may properly establish special medical staff funds, wholly under their own control, which they may support as they see fit, disburse as they may agree.

7. Fees for professional medical services are properly paid only to the responsible physicians and may not be appropriated by any other person or agency.

8. The physician is the sole arbiter as to the ways he may dispose of his professional income, without duress, consistent with the laws of the land and the Principles of Medical Ethics of this association.

This is in keeping with, and perhaps clarifies the policy which has long been a reality in our state, but the re-emphasis of the importance of each physician submitting his own bill, or being identified on a statement, is not stressed sufficiently.

Medical Manpower

For some time the American Medical Association has been accused of not producing enough physicians. The fact is that in the last 20 years the population has increased 28 per cent while the medical graduates have increased 50 per cent, roughly 5,000 each year to 7,500 each year. All agree that the demand for physicians and allied health personnel has increased. The AMA collaborating with the government set up a committee or commission on Health Manpower. Their activities were reviewed by the board of trustees and presented to the House of Delegates for information.

The House accepted for information a report from the Board which pointed out that "The production of well qualified physicians in adequate numbers is necessary to meet effectively both social and economic demands for health care." It reviewed some of the activities of the Committee on Health Manpower and concluded that "The AMA should continue to study the effect of new roles for health personnel and new interrelationships and interdependencies between health professionals, as well as the impact of innovative concepts on the organizational structure evolving in the general system of health care delivery. . .

"In any event, our resolve should always be as it is now: to use the best tested and most forward looking measures to provide excellent health care for all our citizens through an ample number of able, educated and highly skilled physicians."

The House also referred to the Board, for consideration by the committee, a resolution that "deliberations include strong emphasis on sound ways of accelerating medical education in all its phases, including post-MD and graduate education, and of increasing the supply of physicians in all categories."

In addition, the House adopted reports calling for revision of the Essentials of Approved Residencies in radiology, obstetrics and gynecology; adopted a resolution calling for the promotion of better practices in inhalation therapy; and adopted a resolution that the AMA reaffirm its support of all forms of nursing education; that hospitals which conduct diploma schools of nursing be commended; that such hospitals be urged to continue their schools and increase enrollment; and that the AMA take appropriate action in consultation with professional nurses' associations and the American Hospital Association to encourage increasing enrollment in diploma schools and at the same time improve education standards.

Political Surgery

For the past five years the Society of Abdominal Surgeons have been aspiring to control the AMA section on general surgery. This year their efforts paid off in a big way. A slate of officers backed by the American Association of Abdominal Surgeons won five of the seven officers to control the section. This really touched off a round of debate which ended with the House condemning the term American Board without AMA approval. It's possible that someone may want to take another look at this House action for any organization can call themselves a board.

Members' Disability Insurance Program

The House adopted the report of the Reference Committee on this subject, and referred to the Board a number of resolutions pertaining to it.

The committee's report, as adopted, recommended that the House authorize the Board to make every effort to continue the AMA Members Group Disability Insurance Program with the same premium-benefit structure. It also recommended the following guidelines to aid the Board in negotiating and executing the necessary contracts and in the future operation of the program:

1. The contract should provide ample assurance that disability claimants will be treated equitably and justly.

2. The carrier should guarantee benefits and premiums for a period of at least five years in order to assure the stability of the program.

3. Promotional literature should be approved in advance by the Board or its designee. All measures within the bounds of dignity and ethics should be utilized to promote the program.

4. A continuous ongoing review of the entire program should be maintained. The insureds and other members should be made aware that such a review may reveal in the future the necessity for a revision of the program at the end of the five-year period.

5. Information regarding the operation of the program, its financial aspects and the processing of claims should be available to the Board for review at any time.

6. An AMA Disability Insurance Review Committee should be continued and should provide a mechanism for claims review.

The hearings held by this committee and their deliberations in executive session were long and arduous. Their report appeared to be what the doctors of Colorado wanted. The delegates have never received as much mail and helpful advice on any item as they did on this disability insurance report. This is appreciated because our purpose is to represent the doctors of Colorado at the national level. In reality the insurance is a bargain for a doctor at any age group.

The Quarrel with HEW

There were several resolutions calling for a Congressional investigation of the Department of Health, Education and Welfare and an evaluation by Congress of the performance of Undersecretary Wilbur J. Cohen. Modern medicine covered this so interestingly that I will quote them verbatim.

Delegations from Louisiana, Florida, and South Carolina sought an AMA-supported Congressional investigation of the Department of Health, Education, and Welfare and an evaluation by Congress of the performance of Undersecretary Wilbur J. Cohen.

The reference committee, however, presented a much milder substitute resolution which predicted a Congressional move to investigate HEW, and would "encourage and commend" the legislators involved. There was no reference to Undersecretary Cohen. What the House then adopted was an amended version saying that if legislation is introduced to investigate HEW, the AMA will offer any information it can.

Sentiment had been strong at the reference committee hearing for making the undersecretary the AMA's chief target in a Congressional investigation.

After several Florida doctors insisted on pushing for Mr. Cohen's resignation, witnesses from other states tried to temper the language. "From a pragmatic standpoint," said one, "this resolution will do us more harm than good." Another agreed that Mr. Cohen may want to socialize medicine but that what has been done could not have been done by him alone.

Dr. W. Robyn Hardy, New Orleans, observed: "If I wanted to destroy General Motors I wouldn't shoot the president of the company, and if I want to stop the powers of HEW I don't want to shoot one man in it. I want to destroy HEW. We need to start at the bottom and tear out the foundations. Our efforts are in the wrong direction."

The House debate and oratories on all of this was very basic and reassuring. Their official action was as follows:

Several resolutions were offered to the House questioning whether the administration of government programs is truly carrying out the intent of Congress in its passage of laws. They were combined by the House into one resolution stating "That if legislation is introduced to investigate the activities of the Department of HEW and its executive personnel who are concerned with health matters to determine if the intent of Congress is being carried out, the American Medical Association will provide to such an investigation any information that its Board and councils may secure in these matters."

The resolution also pointed out that since the most effective method to preserve the private practice of medicine is to elect proper officials at all levels of government, "the American Medical Association urges that physicians, as individuals, redouble their efforts in political activities."

It was also resolved that the Association "continue and expand its efforts to inform our membership of its activities to represent them, particularly before the Congress and the federal agencies."

The House also adopted a resolution "That medical societies be urged to investigate, document and report to the Law Division . . . all violations of Public Law 89-97 by officers or employees of the federal government" and that "a status report be provided to this House at the 1967 Clinical Convention."

The House also reaffirmed the Association's opposition to S. 260 (the Hart Bill) and its support of direct billing under Part B of medicare on the basis of a physician's itemized statement of charges.

The House supported AMPAC and the state PAC organizations by adopting a resolution recognizing "that leadership at all levels of medicine should make individual commitment to state PAC-AMPAC membership and local PAC programs, wherever this is legally possible."

Generic Prescribing

A resolution combining several state resolutions was adopted by the House, asserting "that the AMA again reaffirm its policy that physicians should be free to use either the generic or the brand names in prescribing drugs for their patients; and encourage physicians to supplement medical judgments with cost considerations in making this choice."

Committee on Planning and Development

At the June, 1966, convention of the House, the Board announced the appointment of a committee to study planning and development techniques within the Association. The report of the committee was received and the Board submitted its final report to the House at this convention.

The Board voted to (1) establish a permanent Committee on Planning and Development and (2) select seven active members of the AMA as members. The following charges were established for the committee:

1. Study and make recommendations concerning the long-range objectives of the Association and the resources, programs and organizational structure by which the Association attempts to reach them.

LOMOTIL®

tablets/liquid

controls diarrhea

Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride .....2.5 mg.
(Warning: May be habit forming)
atropine sulfate .....0.025 mg.

In six published studies[1-6] detailed results are given on the use of Lomotil in 111 patients with chronic ulcerative colitis. They show that Lomotil gave satisfactory to "excellent" control of diarrhea in more than two-thirds of these patients. As the disorder advances and destroys bowel musculature, the motility-lowering action of Lomotil, understandably, has less effect.

The successful use of Lomotil in a disorder as exceedingly difficult to treat as moderate ulcerative colitis emphasizes again its unsurpassed antidiarrheal effectiveness in these more common conditions:

- **Gastroenteritis**
- **Acute infections**
- **Spastic colon**
- **Drug induced diarrhea**
- **Functional hypermotility**

For correct therapeutic effect
Rx correct therapeutic dosage

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are:

Children: Total Daily Dosage

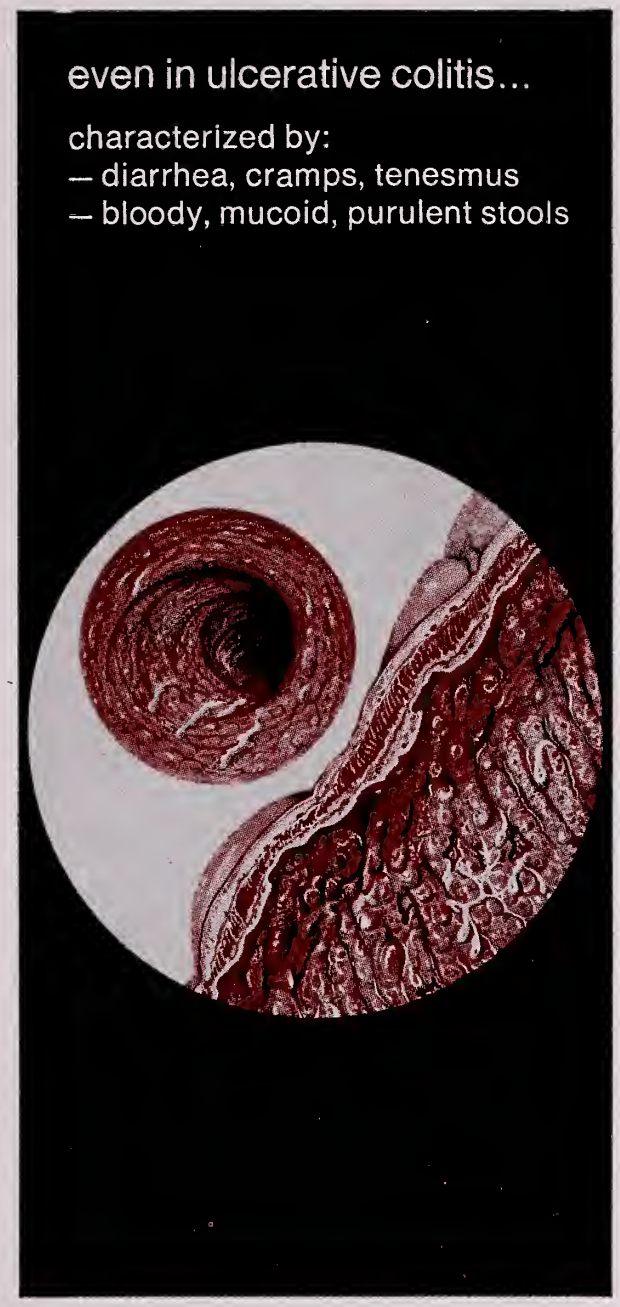
3-6 mo. . . ½ tsp.*t.i.d. (3 mg.)
6-12 mo. . ½ tsp. q.i.d. (4 mg.)
1-2 yr. . . . ½ tsp. 5 times daily (5 mg.)
2-5 yr. . . . 1 tsp. t.i.d. (6 mg.)
5-8 yr. . . . 1 tsp. q.i.d. (8 mg.)
8-12 yr. . . 1 tsp. 5 times daily (10 mg.)
Adults: 2 tsp. 5 times daily (20 mg.) or 2 tablets q.i.d.

*Based on 4 cc. per teaspoonful.

Maintenance dosage may be as low as one-fourth the initial daily dosage.

Precautions: Lomotil is a federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and tachycardia. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.



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SEARLE *Research in the Service of Medicine*

2. Serve as a focal point for the planning activities of the Association and stimulate and coordinate planning activities throughout the organization.

3. Study, or cause to be studied, medicine and the environment in which the Association must function and transmit the conclusions of these studies to the Board.

In the report adopted by the House, the Board earnestly solicited nominations to the committee from delegates, constituent associations, component societies and other interested groups and individuals.

Two resolutions on the subject were referred to the Board.

It is noteworthy that in his report to the House, President Rouse stated that "We now have an established Committee on Planning and Development at the AMA level. I hope that every county and state association will likewise make use of a comparable committee, to plan wisely and develop properly the policies and programs needed in the decades ahead—far beyond just the next year."

They adopted many other resolutions, including these:

Amending the bylaws so that recipients of the Distinguished Service Award and the Citation of a Layman for Distinguished Service will be nominated at the Clinical Convention and the presentations will be made at the next Annual Convention.

Confirming that there is nothing in the military officers' oath that conflicts in any way with the ethics of the medical profession.

Noting that a double standard of policy often exists between so-called "hospital-based specialists" and other types of practitioners with respect to hospital staff appointments and endorsing the "principle of a single standard with respect to staff appointments among all physicians having equivalent credentials in all hospital departments and services as a means of assuring maximum freedom of choice of physicians by patients, and of consultants by staff members."

Requesting the JCAH to "encourage . . . the acceptance, wherever possible, of physicians elected or appointed by the medical staff to the Board of Trustees with full voting rights as the most effective form of liaison between the medical staff and hospital governing authorities."

Encouraging farm equipment manufacturers to establish standards for basic overturn protective frames and crush-resistant cabs.

Reaffirming the Association's policy regarding tobacco and health and promising vigorous continuation of its measures for corrective action.

Urging that disposable hypodermic syringes be thrown away in such a way as to prevent their possible re-use.

Encouraging state associations to inform state legislators of the need to re-examine existing "battered child" laws so child abuse is to be reported by physicians as well as medically oriented social services.

Supporting continued research and control measures for venereal disease.

Reaffirming the Association's opposition to requirements for certification and re-certification.

Stating the Association's continuing concern for the prevention of death and injury from burns by "stepping up its education campaign to make the public more aware of the dangers inherent in flammable fabrics and other related flammable materials" and resolving that "the AMA cooperate with other voluntary associations in the furtherance of this program."

Finally, the House welcomed as its guests at the opening session, the winners of the AMA's top awards at the 18th International Science Fair, held in San Francisco. They were Susan T. Bertrand, New Albany, Ind., whose exhibit was "Electrophoretic Analysis of Blood Serum;" and Stephen R. Igo, Winterset, Iowa, with an exhibit showing the design, construction and operation of a small, synchronous intrathoracic auxiliary ventricle. Both winning exhibits were on display during the convention.

The Scientific Program

Because of a time limitation it is difficult for the delegates to assess the quality of an annual meeting scientific program. All sessions attracted capacity attendance and the comment in general was very favorable.

The National Diet-Health Studies report received much favorable comment. The National Health Institute and the food industry collaborated in preparing special fat modified foods.

Serum cholesterol levels fell an average of 11 per cent for all men on experimental diets, and the decrease was greater in the ones who really cooperated. The largest cholesterol value drop, however, occurred in the men who lost the most weight.

It was a detailed report and very well presented but only reaffirmed what everyone preached but few practiced.

A group from Philadelphia General Hospital recorded electrocardiograms continuously during 2½ hours of daylight driving by 40 healthy adults and 46 with proven coronary heart disease.

They recorded significant changes involving the coronary subjects with abnormal resting electrocardiograms. From this they concluded that the changes recurred frequently and may contribute to the development of myocardial infarction and the occurrence of highway accidents.

Our delegation and our state were well represented at the meeting. The Clinical Session of the American Medical Association is to be held in Colorado in the fall of 1969. This meeting means a great deal to our state from public relations, educational and economical standpoints. For these reasons and to have a resting station for the Colorado doctors, our state maintained a hospitality suite in the Haddon Hall Hotel. The Colorado Flower Growers Association furnished us dozens of beautiful carnations. A beautiful vase of carnations was put in the hospitality suite for each delegation. In addition to this Mr. Derry was able to obtain 400 souvenir copies of the Colorful Colorado Magazine. We received many compliments and good comment on the beauty of our state and many friends promised to make sure that we realized that they would attend. I think that we feel a great deal of thanks is due to Mrs. Geraldine Caldwell and Mr. Don Derry. I know of no other delegation that has the wonderful executive help that we do.

Respectfully submitted,

KENNETH C. SAWYER,
Senior Delegate

SOCIETY OFFICERS

Colorado Medical Society

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Executive Secretary: Donald G. Derry, 1809 E. 18th Ave., Denver. Office Telephone 399-1222.

Montana Medical Association

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.
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Nevada State Medical Association

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Associate Editor, Rocky Mountain Medical Journal: Ralph R. Marshall, Albuquerque.

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Utah State Medical Association

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Speaker, House of Delegates: J. Clare Hayward, Logan

Alternate Speaker, House of Delegates: William R. Christensen, Salt Lake City

Scientific Editor, Rocky Mountain Medical Journal: Alan E. Lindsay, Salt Lake City

Associate Editor, Rocky Mountain Medical Journal: Mr. Harold Bowman, Salt Lake City

Executive Secretary: Mr. Harold Bowman, 42 South Fifth East, Salt Lake City. Telephone EL 5-7477.

Wyoming State Medical Society

OFFICERS—1966-67—Terms of officers and committeemen expire at the Annual Session in the year indicated. Where no year is indicated the term is for one year only and expires at the 1967 Annual Session.

President: Ray K. Christensen, Powell

President-elect: Laurence W. Greene, Jr., Laramie

Vice President: Henry N. Stephenson, Newcastle

Secretary: Raymond E. Kunkel, Thermopolis

Treasurer: Elmer S. McKay, Lander

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Alternate Delegate to the A.M.A.: Frederick H. Haigler, Casper

Speaker of the House: John H. Froyd, Worland

Vice Speaker of the House: Roy Holmes, Casper

Scientific Editor for Wyoming, Rocky Mountain Medical Journal: Francis A. Barrett, Cheyenne

Associate Editor for Wyoming, Rocky Mountain Medical Journal: Mr. Arthur R. Abbey, Cheyenne

Legal Counsel: Mr. Byron Hirst, Cheyenne

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OBITUARIES

Augustine S. Cecchini, M.D., died Sunday, August 6, 1967, at St. Joseph's Hospital in Denver following a long illness. He was born May 21, 1888 in Denver. He received his primary and secondary education in the Denver Public Schools and his medical training at the University of Colorado Medical Center in Denver. He was awarded an M.D. degree from that institution in 1913.

Following graduation from Medical School in 1913, he began the practice of medicine at La Modera, New Mexico. At the beginning of World War I, 1917, he abandoned his practice in New Mexico and joined the United States Medical Corps where he served with distinction until the end of the war in 1918.

After his discharge from the Army Medical Corps in 1918, Dr. Cecchini opened an office in Denver and engaged in general practice until he was forced to retire because of ill health in 1964.

Dr. Cecchini was a long-time member of the Denver Medical Society, the Colorado Medical Society, and the American Medical Association. He was also a life-member of the Executive Board of Catholic Charities of Denver and served for many years as a volunteer worker in the Ave Maria Clinics. In 1963 he was awarded the traditional fifty-year pin and plaque by the Denver Medical Society.

Dr. Cecchini remained a bachelor all his life and was fond of saying jokingly that he was married to his profession. He is survived by a brother, Joseph Cecchini, of Denver.

The American Cancer Society's professional education program focuses on the six cancer sites in which early diagnosis can improve the results of treatment. These sites are: breast, colon-rectum, uterus, lung, mouth and skin. Members of the medical profession take the lead in spreading these facts to the public. Doctors and dentists who want further information can call the local ACS office.

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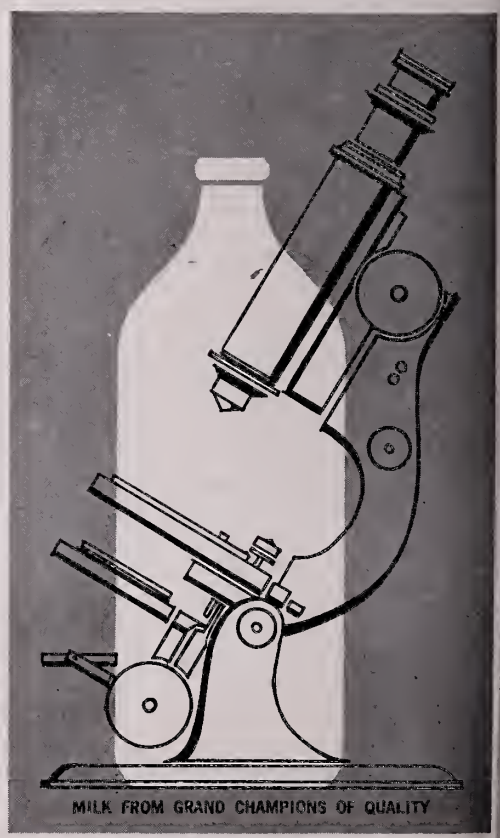

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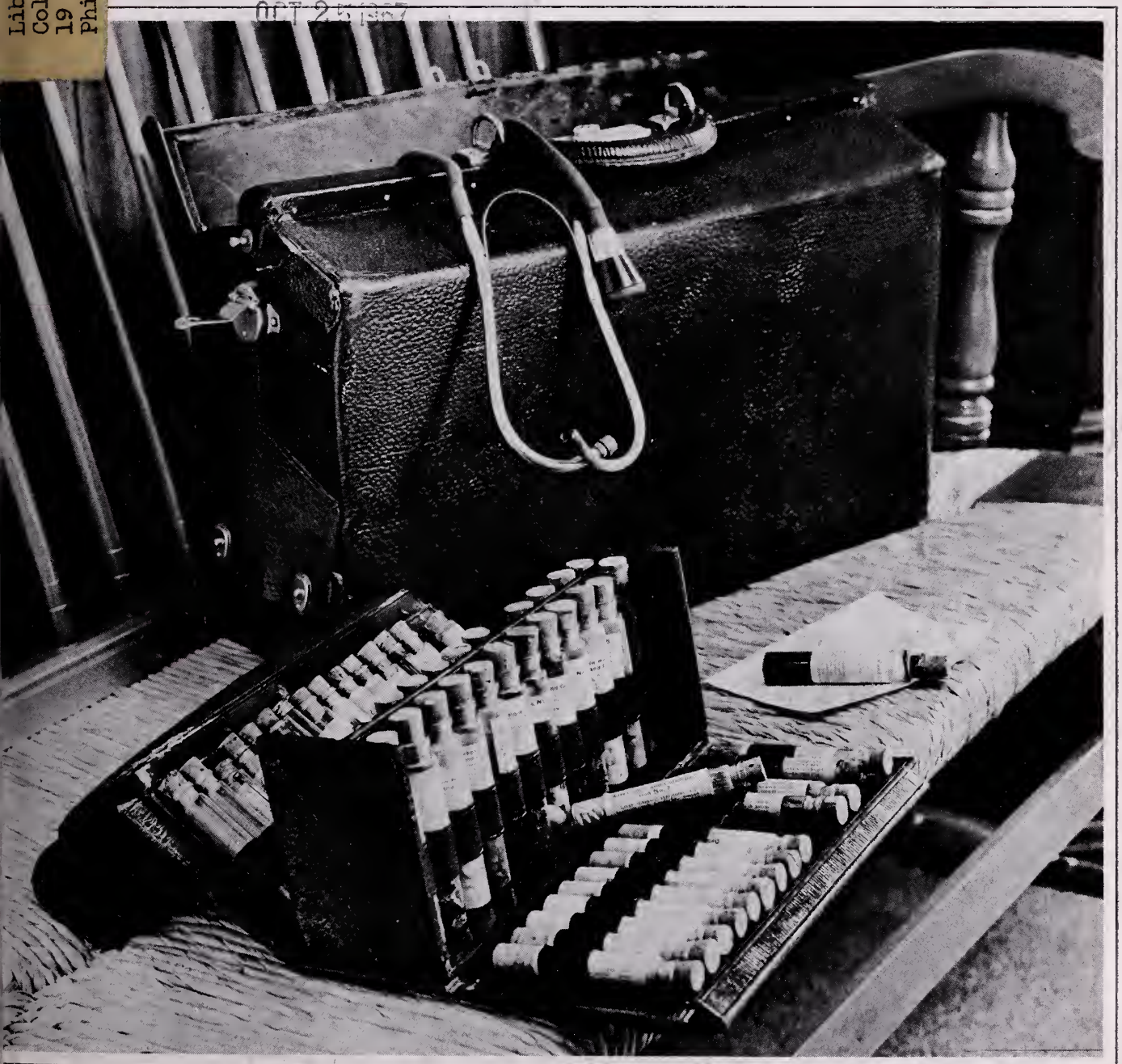

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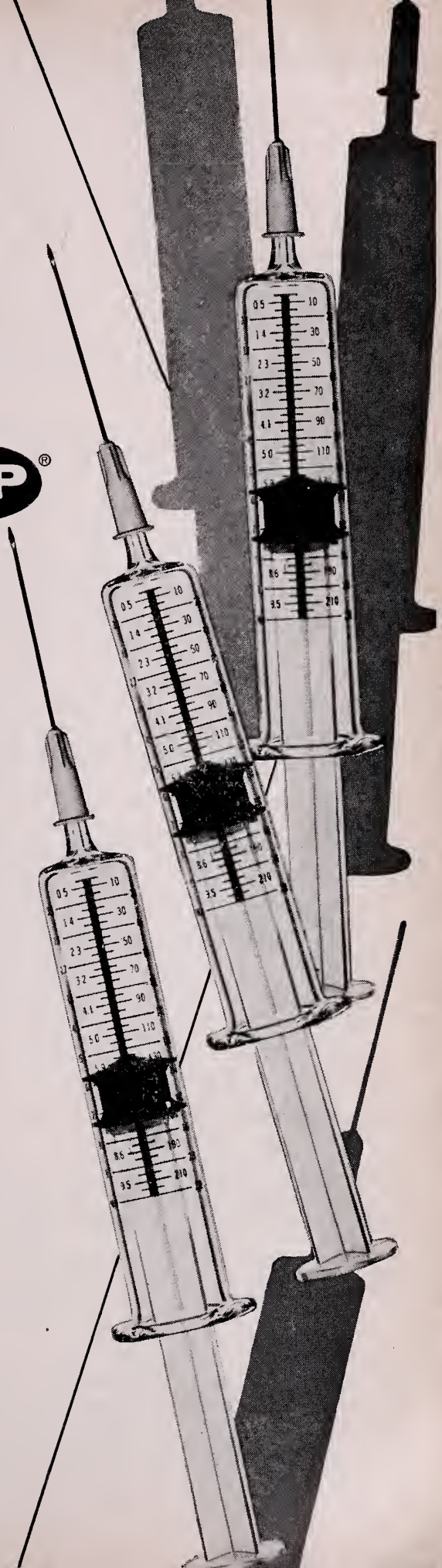

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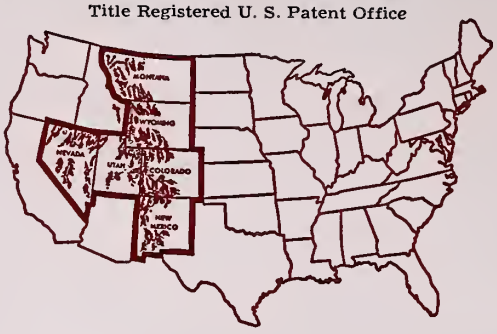

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Our Cover Photo

Turn-of-the-century home delivery medical bag.

Photographer: Don Wolter

(See editorial page for Cover Story)

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September 11, 1967

To the Editor:

I am submitting a copy of a letter sent to me by an old friend, who after lecturing to our medical staff about some more current orthopedic problems than those mentioned in his letter, visited Mesa Verde National Park. His inferences after seeing the sandals at the museum at the Park are quite interesting and I have received his permission to make the letter available to the Rocky Mountain Medical Journal readers.

In another letter to me, Dr. Kopell speculated about the flattened occiputs of these Indians. It has been suggested that the change in shape of the head followed a new cradle instituted in the 8th century. A firm cradle board replaced a soft padded cradle used before this time, and (without a pillow) the flattening of the back of the head resulted.*

Not so, suggests Dr. Kopell. The point of the binding, he believes, was to prevent a whiplash injury. It is presumed that the mother returned to work soon after delivery, and carried her baby papoose style. Probably so early that the baby could not hold his head up. To prevent a high cervical transsection from a flopping head, the head had to be bound down to the carrying apparatus. Possibly the change to a more rigid supporting board was needed to hold the baby more securely in position when the mother had to climb ladders, perhaps coincident with the move from the cliff top to the cliff side. Thus the flattened head was an accident, and only later became a desired status symbol.

The point of my letter, reinforced by a visit to the park this summer, during which I noted in the museum some exhibits with medical explanations that did not seem to be in keeping with current knowledge, is that perhaps re-evaluation of some of the skeletal remains and other data may be in order at this time, perhaps by a medical team with some archeological and anthropological talents.

At least, I am sure that such visitors would enjoy their sojourn in this most fascinating National Park just as we did.

Marcus J. Smith, M.D.
(Santa Fe, N. M.)

*Reference: Indians of the Mesa Verde, Don Watson, Mesa Verde Museum Association, Mesa Verde National Park, Colorado, 1961, page 174.

Dr. Kopell's letter follows:

August 9, 1967

Curator—Museum

Mesa Verde National Park, Colorado

Dear Sir:

I recently had the pleasure of visiting the Mesa Verde National Park, and going through the museum. It was a valuable and entertaining educational experience for me and my family. After viewing and discussing the museum exhibits, I felt an impulse to comment on part of it. A professional interest has prompted the following comments.

One of the exhibits that aroused my special attention was the sandals. The first point concerns the cut-outs, or scalloping of the forward edge. It would seem that the reason for this was to free the toes to increase their prehensile ability in climbing. The sandals would protect the sole, but their rigidity or non-conformability would interfere with a secure footing on a ladder rung or toe-hold in a cliff side. The point was made in an exhibit about the place of the cut-out; in some it was at the second and third toes and some at the fifth toe. It could be inferred that the 2-3 toe cut-out was important for ladder rungs, the fifth toe cut-out when more irregular cliff cracks or toe-holds were to be used in climbing. The freeing of the fifth toe would allow greater flexibility to conform to irregular surfaces.

The second point was the unusual or pronounced wear at the heels. There was a sandal on exhibit with a hole worn out at the heel. It is inferred that this was the result of the toe cut-out. As the plantar surface of the toes were unprotected, when walking over level ground that was hot or rough, the toes might be held in some degree of hyperextension—for protection from the disturbing ground contact. A toe posture similar to that assumed in a positive Babinski reaction would ensue. The resultant hobbled gait, used in walking, not running, would throw abnormal weight on the heels. This can be very easily tested out by yourself in walking about while maintaining toe hyperextension.

Finally, x-ray studies of the feet of an older skeleton might show correlative hypertrophic changes. Here might be a key to some productive research.

Yours very truly,
Harvey P. Kopell, M.D.
Associate Professor
Orthopedic Surgery
New York University
School of Medicine

THE WASHINGTON SCENE

A monthly news summary from the nation's capital by the Washington Office of the AMA.

The American Medical Association strongly opposed a suggestion that doctors' fees under medicare be based on Blue Shield schedules.

The suggestion was made to AMA officials while they were testifying before the Senate Finance Committee on the House-approved social security bill which includes amendments to the medicare and medicaid programs. Dr. Samuel R. Sherman, San Francisco, chairman of the AMA's Council on Legislative Activities, said there would be heavy opposition from the medical profession to any change from the present usual-and-customary fees.

Dr. Milford O. Rouse, president of the AMA, gave general approval to the bill passed by the House which, he pointed out, incorporated a number of changes recommended by the AMA. He said further substantive changes better could await the knowledge that one or two more years of experience would bring. However, he urged that consideration then be given to major changes in Medicare Plan B which covers physicians' services.

"We believe it is possible for the Congress, the medical profession and others interested in the subject to develop a new mechanism for delivering medical care to people over 65 that would be consistent with existing private sector mechanisms," Dr. Rouse said.

" . . . the Congress realizes it has an open-end program with rising and perhaps uncontrollable costs. We believe that it is possible, and would be eminently practical, to devise another approach that could solve problems which beset Part B. One possibility, for example, might be to substitute for the Part B program a subsidy to all eligible persons, to be used for the purchase of private health insurance. Such an approach could have many advantages.

"The eligible over-65 patient would have a qualified private insurance program of his choice, at no greater expense than he has under the Part B Medicare program; carriers would have a greater responsibility for their own performance with an opportunity to exercise initiative; the physician would continue to deal with his over-65 patient in every respect in the same way as he did before the patient's birthday; and the Congress would have a program with defined costs, and one which would offer the nation a comparison of mechanisms in use to meet the problems of financing health care of the elderly."

Other points in the AMA testimony included:

—Beginning with the provisions of Title XVIII (Medicare), the (House) bill does not place the disabled of all ages under Medicare, as had been proposed earlier. We think the House acted wisely in establishing instead, a special Advisory Council to study the problems related to the inclusion of this group and to study the costs involved.

—In addition to the present method of payment for physician's services, the (House) bill provides two new options: either the physician can submit his itemized bill directly to the carrier, in which case payment of 80 per cent of the reasonable charge would be made to him, providing the full charges does not exceed the reasonable charge, or to the patient at his direction; or the patient may submit the itemized bill and be paid 80 per cent of the reasonable charge. From the program's inception, the AMA has urged that the payment be permitted on the basis of an itemized statement of charges.

—Outpatient hospital diagnostic services would be transferred to Part B of Title XVIII and be subject to the deductible and coinsurance features. This is in keeping with our recommendation to the House Ways and Means Committee that outpatient services be included under Part B, and so remove the administrative difficulty of distinguishing between therapeutic and diagnostic services.

—The bill eliminates both the requirement for initial physician certification for hospitalization of Medicare patients and the requirement for physician certification for outpatient hospital services. The AMA recommended the elimination of initial certification and the subsequent recertification. We continue to recommend the addition of this second step to eliminate the requirement of any certification, since any need in this regard will be satisfied by the work of the medical review or utilization review committee.

—We believe that physicians, having been brought under Social Security, should be accorded the same privilege and opportunity for reaching a fully insured status as was accorded other professional groups when they were included in the program. Accordingly, we urge this Committee to consider the adoption for physicians of an "alternative insured status" similar to that permitted by the amendments of 1954 and 1956 which brought into the program many new groups of people and professional self-employed persons, including lawyers. Further, we urge this Committee to consider amendments that would "drop out" an appropriate number of years for physicians to make their eligibility for cash benefits both equitable and realistic.

—We must oppose the drug legislation offered before this Committee as amendments to H.R. 12080. We would suggest that rather than to enact such legislation it would be worthwhile at this time to study in depth, all the economic and therapeutic factors which enter into the use of prescription drugs.

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References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

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INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

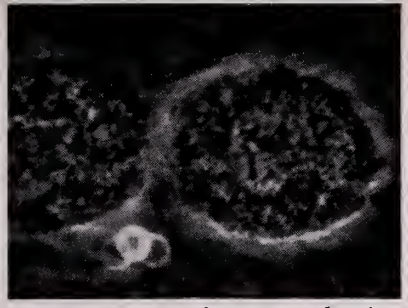
Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

Visual evidence of how corticosteroids influence the inflammatory reaction

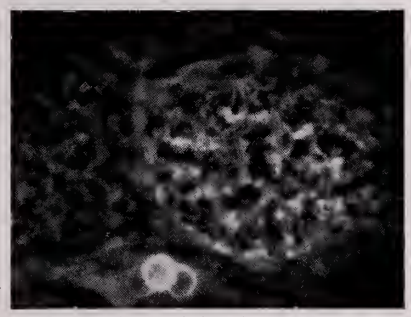
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



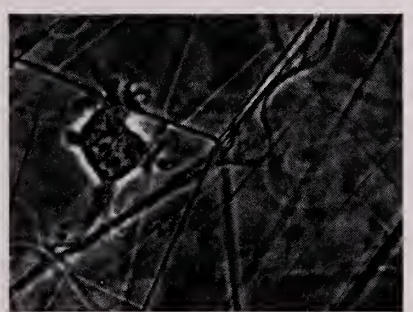
Phase-contrast microscopy showing mast cell before injury.



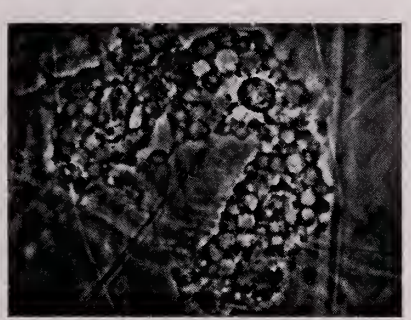
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

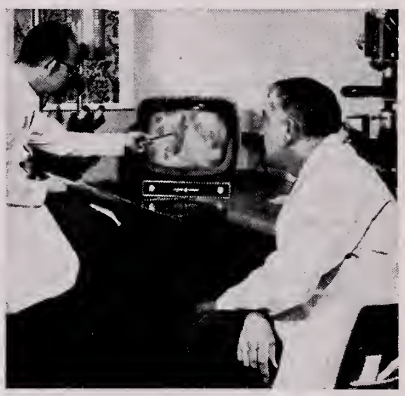
Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



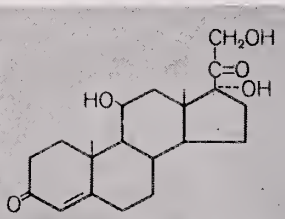
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

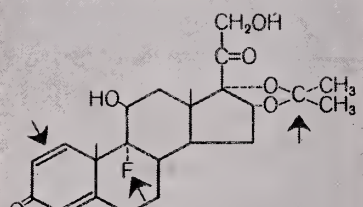
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

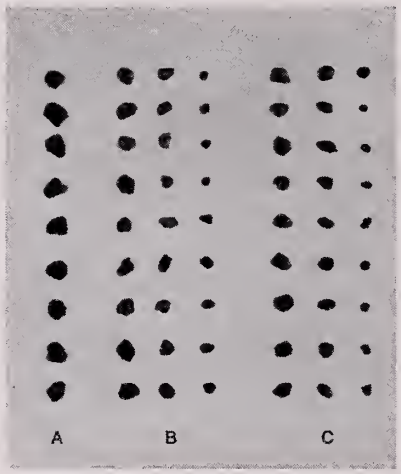


Fluocinolone Acetonide (Synalar)

- ☐ *a double bond between carbons 1 and 2*
- ☐ *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- ☐ *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B—injected with 1, 2 and 4 mg. of hydrocortisone—show progressively smaller thymuses as does Group C—injected with fluocinolone acetonide—but with only 1/500th the dose of hydrocortisone.

THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

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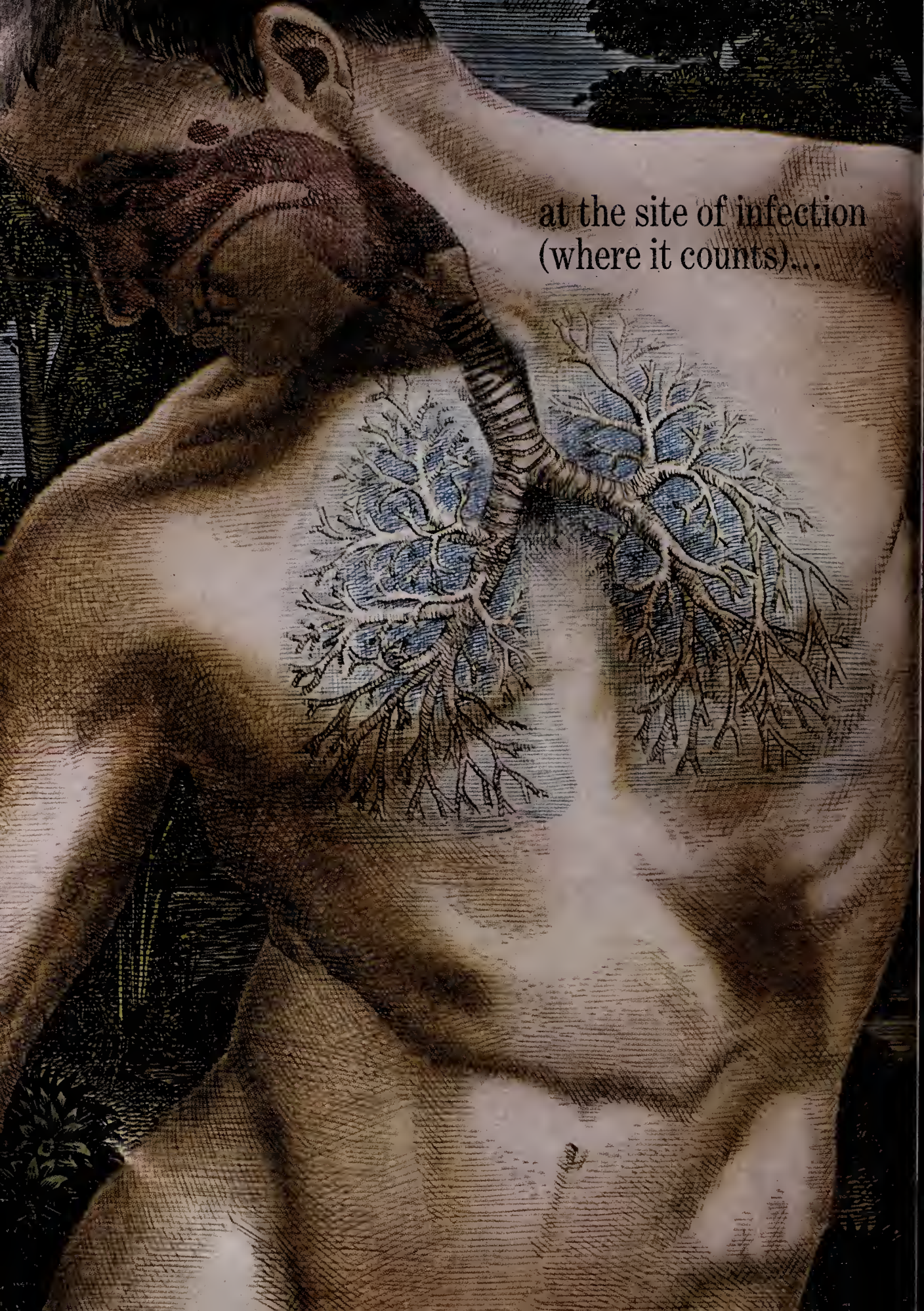
Results often comparable to those of systemic corticosteroids with fewer hazards


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

701464

Ilosone® Lilly
Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by micro-organisms sensitive to its action—especially staphylococci, hemolytic streptococci, and pneumococci.

It has been effective in streptococcus infections, particularly acute bacterial pharyngitis and tonsillitis; staphylococcus disease, including soft-tissue infections, furunculosis, abscesses, cellulitis, carbuncles, and wound infections; pneumococcus pneumonia and acute bronchitis with pneumococci on culture, bronchopneumonia, and otitis media.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents; surgical procedures should be performed when indicated, and large doses of the antimicrobial agents should be employed.

Penicillin is the drug of choice for syphilis and gonorrhea, but Ilosone in multiple 500-mg. doses has been useful in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Known history of sensitivity to this drug; preexisting liver disease or dysfunction.

Adverse Reactions: Hepatic dysfunction with or without clinical jaundice has been reported infrequently. Changes in liver function tests indicative of intrahepatic cholestasis appear to be the result of individual idiosyncrasy. Findings subsided when treatment was discontinued. Occasionally, symptoms simulated extrahepatic obstructive jaundice or the colic of biliary tract disease.

When jaundice appeared to be related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Gastro-intestinal disturbances not associated with hepatic effects and occasional allergic manifestations (urticaria, skin eruptions, and, rarely, anaphylaxis) have been reported. The normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Administration and Dosage: Ilosone is administered orally.

Infants and children under twenty-five pounds, 5 mg. per pound every six hours; twenty-five to fifty pounds, 125 mg. every six hours. Adults and children over fifty pounds, 250 mg. every six hours.

For severe infections, double the dosage. When larger doses are indicated, consider parenteral erythromycin therapy. In beta-hemolytic streptococcus infections, maintain treatment for ten days to prevent rheumatic fever or glomerulonephritis.

In syphilis, a total of 20 to 30 Gm. is administered in divided doses for ten to fifteen days. Close follow-up is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examination of spinal fluid is recommended during follow-up.

In gonorrhea, the dosage is 500 mg. four times a day for four days. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics and monthly serologic tests for three months. For detailed information, consult the package literature.

How Supplied: Pulvules® Ilosone, Capsules, N.F., 125 mg.* and 250 mg.*

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg.* per 5-cc. teaspoonful.

Ilosone, 125, for Oral Suspension, N.F., 125 mg.* per 5-cc. teaspoonful.

Ilosone Drops, 5 mg.* per drop.

Tablets Ilosone Chewable, N.F., 125 mg.*

*Base equivalent. [080967]

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964. 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962. 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

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tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

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Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

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I decided it was time for you, Doc."

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Two tablets in the morning and two in the evening will usually provide day and night relief by helping to clear congested air passages for normal, free breathing. Novahistine LP is formulated to provide continuous therapeutic effect for 8 to 12 hours. The decongestant ingredients help restore normal mucus secretion and ciliary activity—physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

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TROCINATE® 400 MG.

BRAND THIPHENAMIL HCl.

The relief received from the first Trocinate 400 mg. tablet is so prompt that the discomfort of diarrhea ceases to be a bother. May be repeated every four hours.

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For acute, non-specific diarrheas **Donnagel® -PG** (Donnagel with paregoric equivalent). Donnagel formula plus powdered opium, USP, 24.0 mg. (equivalent to paregoric 6 ml.) (warning: may be habit forming). Alcohol, 5%.

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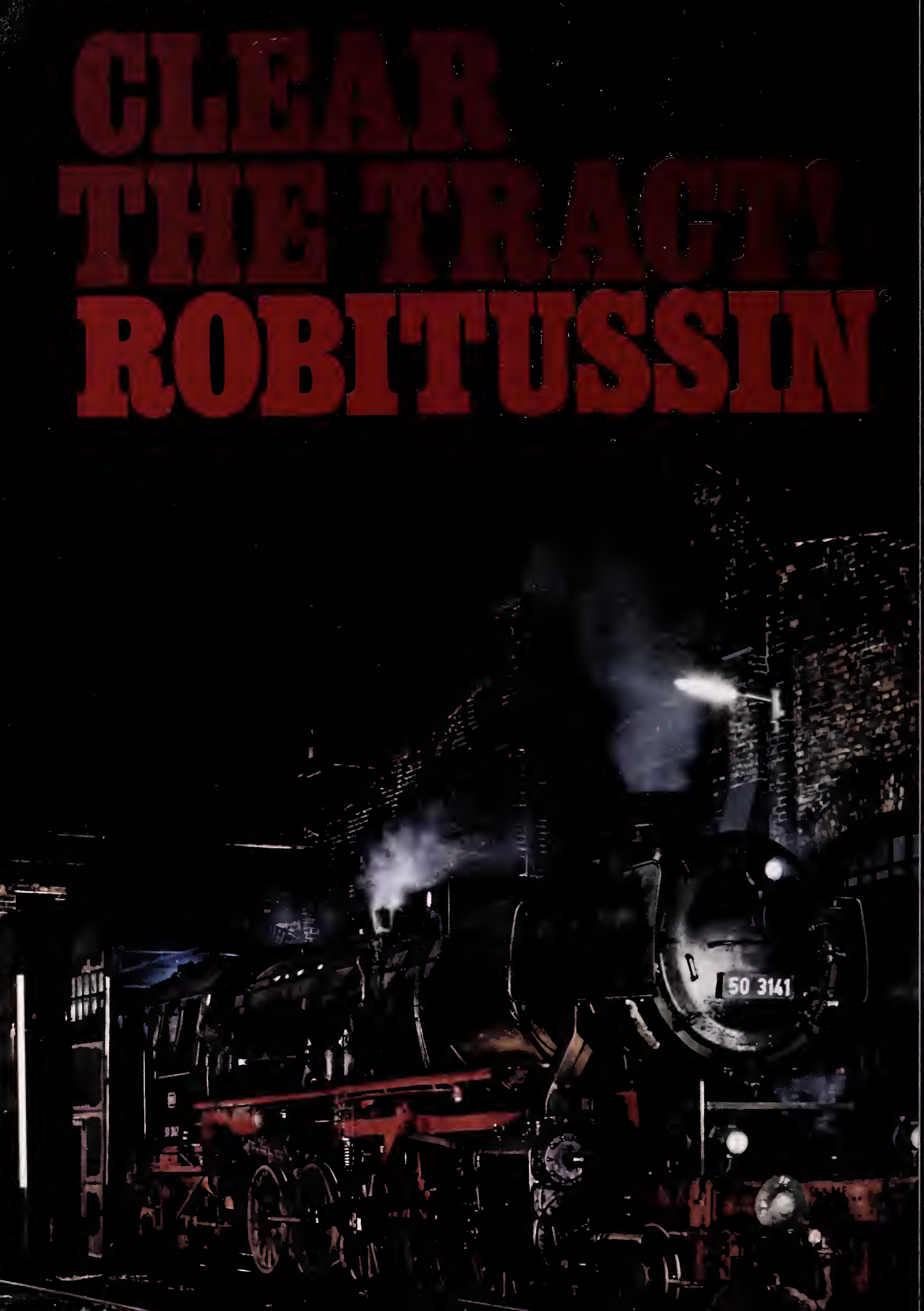

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Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
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For unproductive allergic coughs
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Each 5 cc. contains:
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Codeine phosphate . . . . . 10.0 mg.
(warning: may be habit forming)
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Non-narcotic for 6-8 hour cough control
ROBITUSSIN®-DM
Each 5 cc. contains:
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Dextromethorphan hydrobromide . 15.0 mg.
Alcohol, 1.4%

New! Clears sinuses and nasal stuffiness as it relieves cough
ROBITUSSIN®-PE
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
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Alcohol, 1.4%

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EXPECTORANT	●	●	●	●
DEMULCENT	●	●	●	◉
COUGH SUPPRESSANT		●	●	
ANTIHISTAMINE		◉		
LONG-ACTING (6-8 HOURS)			●	
NASAL, SINUS DECONGESTANT				◉

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Triaminic® (phenylpropanolamine hydrochloride 25 mg., pheniramine maleate 12.5 mg., pyrilamine maleate 12.5 mg.)	50 mg.
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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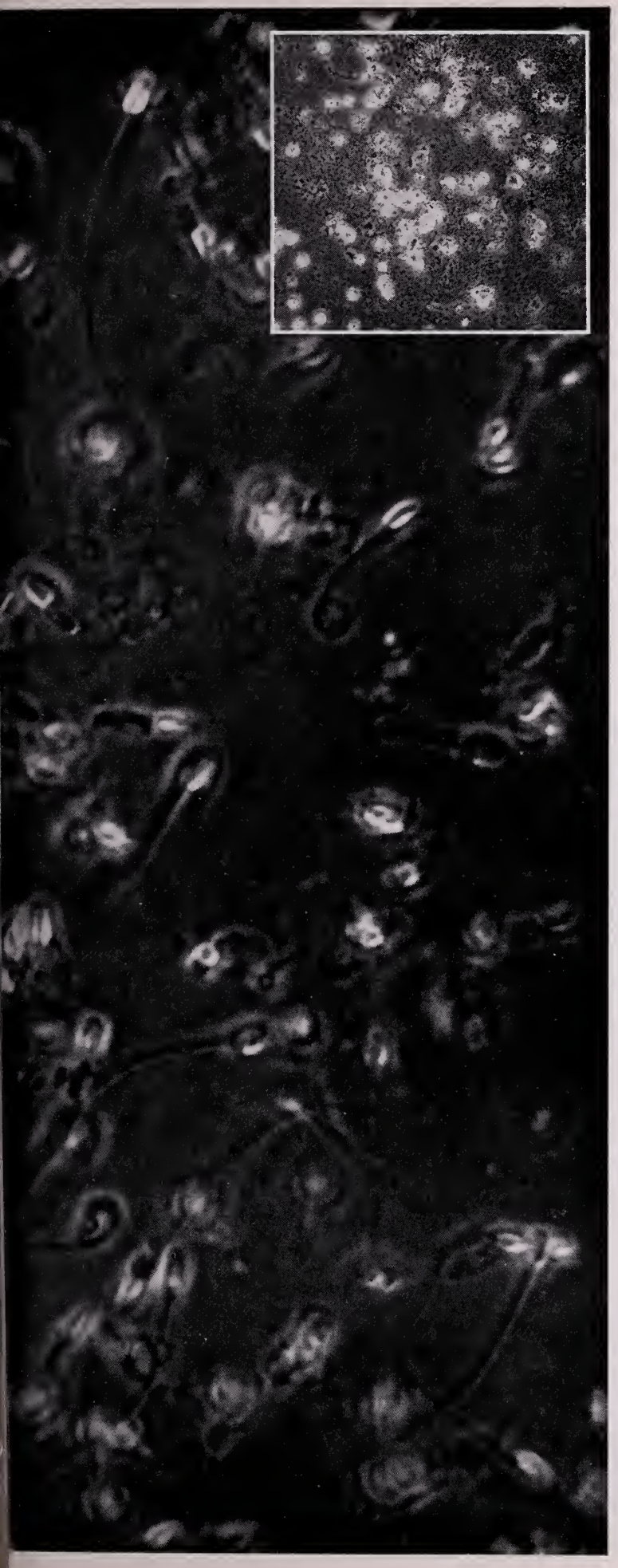


New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1—a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual mid-cycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

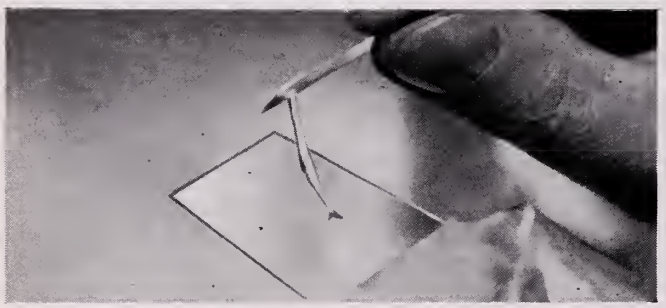
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

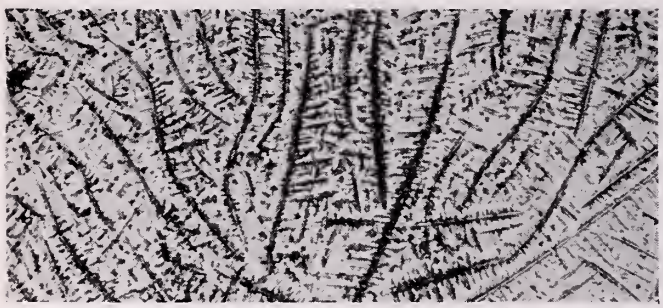
In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

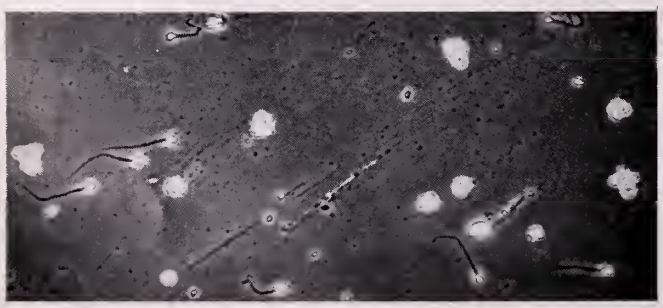
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



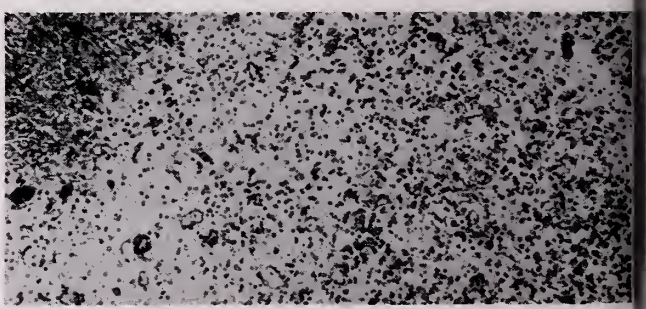
Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.



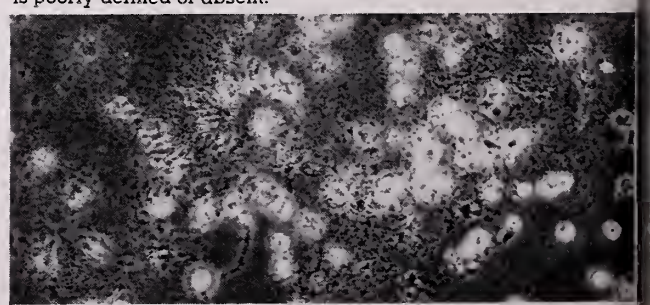
Spermatozoa appear healthy, are active and freemoving.

Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.

Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

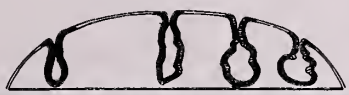


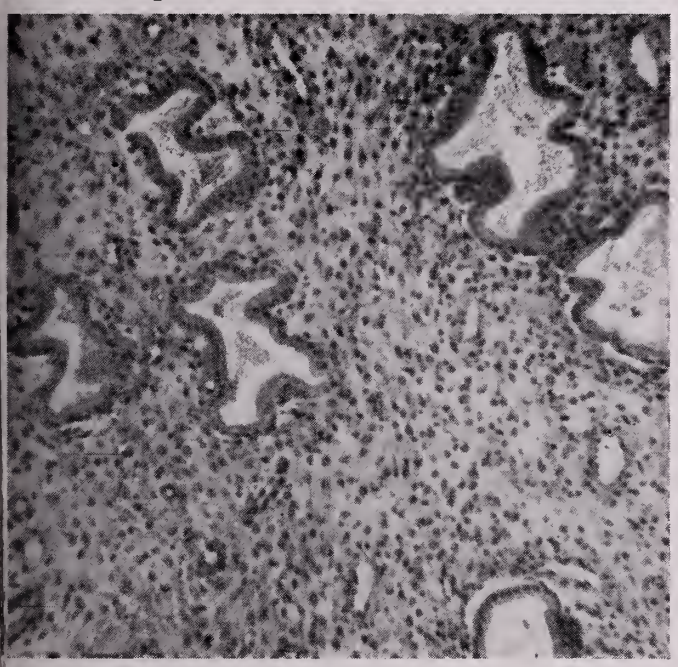
Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses—another possible protective mechanism

Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

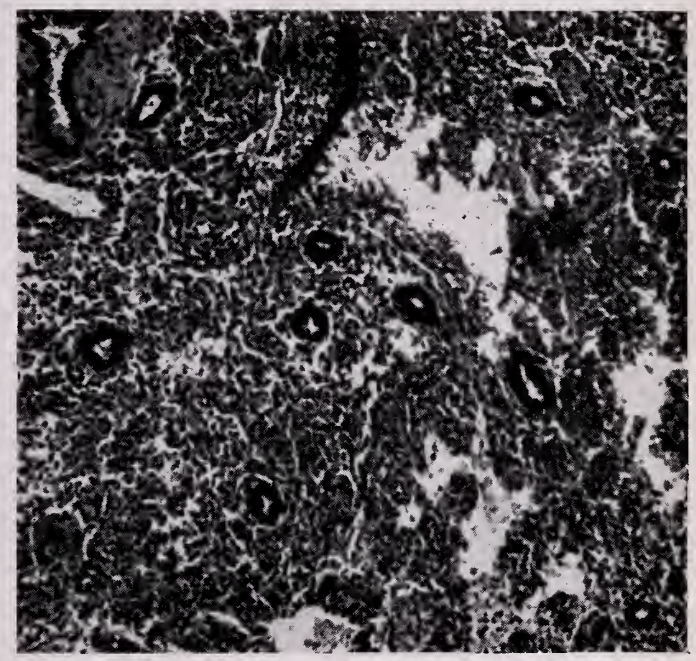
Endometrium of untreated patient





Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

See last page for contraindications, precautions, side effects and dosage.

new Norinyl-1® tablets

(norethindrone 1mg. & mestranol 0.05mg.)

effective fertility control on half the previous dosage

maintains ratio of the established norethindrone/mestranol combination

lower cost

new Norinyl®-1

(norethindrone 1mg. c̄ mestranol 0.05mg.) **tablets**

Reduction of oral contraceptive dosage to lowest effective levels ha become a well-accepted principle of conservative medical practic In keeping with this view, Norinyl is now available in a new strengt in which *both* norethindrone and mestranol are reduced 50 percen Studies show that Norinyl-1 achieves fertility control with only 1.0 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent i human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., a an oral contraceptive, is currently in use by over 2,000,000 wome Clinical experience now establishes that Norinyl-1 also amply meet the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding per *vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: creased bromsulphalein retention and oth hepatic function tests, coagulation tests crease in prothrombin, factors VII, VIII, IX a X), thyroid function (increase in PBI and bu nol extractable protein-bound iodine and crease in T^3 values), metapyrone test, pregna diol determination.

Other side effects reported to have occurr in association with use of this drug are di ness, hirsutism, pains in legs, back, chest a abdomen, dysuria, drowsiness, vaginal charge, libido increased and decreased, er tions, hypermenorrhea, hypomenorrh increased appetite, G.U. infections, varico veins, abdominal fullness, acne, headac nervousness, allergies, blurred vision, pain eyes, and itching in eyes. *For complete clinic data, see package insert.*

Dosage and Administration: 1. One tablet Norinyl-1 is administered orally for 20 da beginning on day 5 of the menstrual cyc (Count day 1 of the cycle as the first day menstrual bleeding.) Repeat this dosage sch ule for each cycle. 2. If no menstrual peri occurs after a cycle of treatment (20 tablets) which patient adhered to the schedule, the tient must be instructed to resume taking t Norinyl-1 tablets 7 days after the previous day course was completed. For example, if t last pill of a previous cycle had been taken a Sunday, then a new cycle of treatment shou begin on the following Sunday. 3. In the pc partum woman, it is recommended that t first cycle of treatment should begin on day of the first menstrual cycle. However, Noriny should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 m with mestranol 0.05 mg.)—Dispensers of 20 a 60 and bottles of 250 tablets.

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Now available: V-Cillin K®, Pediatric, for Oral Solution, 250 mg. (400,000 units) per 5 cc. of solution.

(See next page for prescribing information.)

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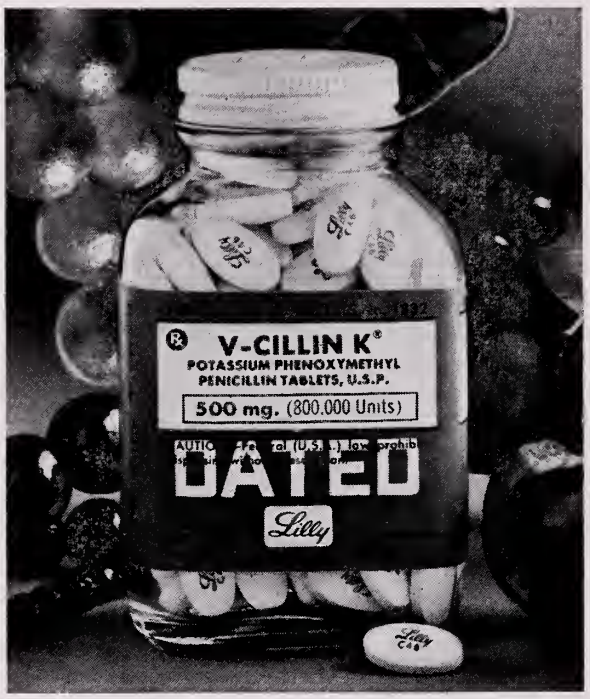

Description: V-Cillin K, the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly), combines acid stability with immediate solubility and rapid absorption. Higher, more rapid serum levels are obtained than with equal oral doses of penicillin G.

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Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strangly pasitive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dasage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

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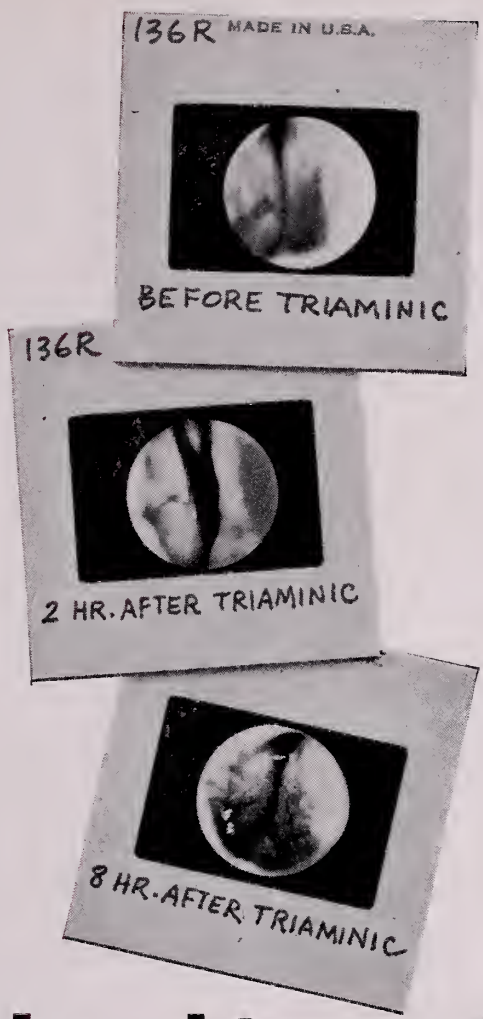
From a continuing study on nasal congestion . . .



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A study being conducted by the Department of Otolaryngology, Greater Baltimore Medical Center is stockpiling evidence that points to the fast action and prolonged relief effected by Triaminic in the treatment of nasal congestion.

Begun in March 1966, the study to date has encompassed 85 patients with common nasal disorders—and measured their response to recommended doses of Triaminic tablets.

Timed to release its oral nasal decongestant and two antihistamines within 8 hours, Triaminic was found to effect partial or complete relief in better than 82% of the subjects treated. Clearing nasal obstruction. Reducing turbinate swelling. Making breathing easier.

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Triaminic® *timed-release tablets*

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride .....50mg. Pyrilamine maleate.....25mg. Pheniramine maleate.....25mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets.

Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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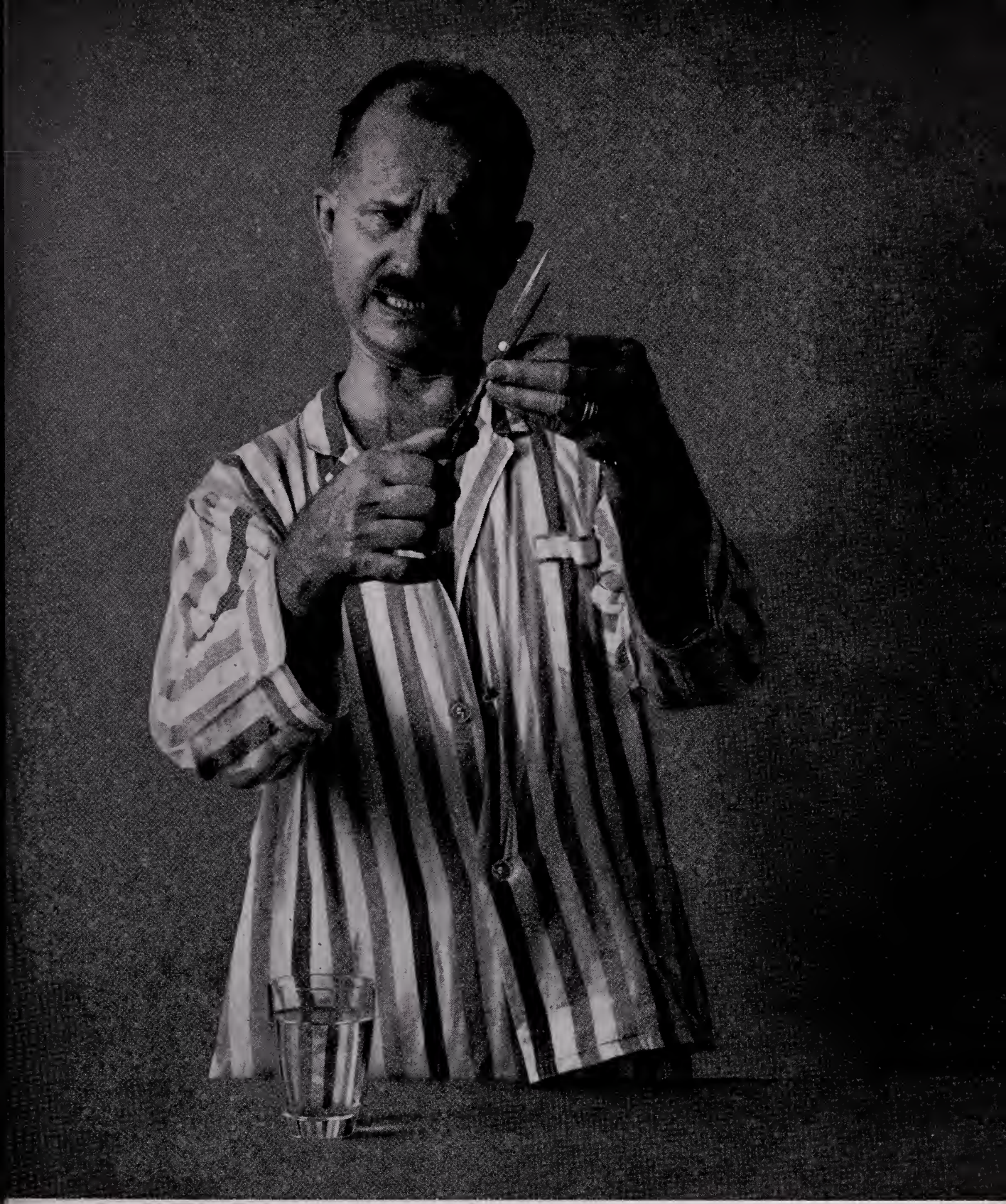

laybe your patients complain:
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ase see brief prescribing summary at the end of advertisement.

Maybe you abandoned Hygroton chlorthalidone
because there wasn't a convenient half strength.

ations: Hypertension and many types of
a involving retention of salt and water.

aindications: Hypersensitivity and most
of severe renal or hepatic disease.

ing: With the administration of enteric-
d potassium supplements, which should
ed only when adequate dietary supple-
ation is not practical, the possibility of
bowel lesions (obstruction, hemor-
, and perforation) should be kept in
Surgery for these lesions has fre-
ly been required and deaths have oc-
d. Discontinue enteric-coated potas-
supplements immediately if abdominal
distention, nausea, vomiting, or gastro-
inal bleeding occur.

ith caution in pregnant patients, since
ug may cross the placental barrier and
se reactions which may occur in the
(thrombocytopenia, hyperbilirubinemia,
d carbohydrate metabolism, etc.) are
tial problems in the newborn.

utions: Antihypertensive therapy with
ton should always be initiated cau-
y in postsympathectomy patients and
ients receiving ganglionic blocking
s or other potent antihypertensive drugs,
rare. Reduce dosage of concomitant
ypertensive agents by at least one-half.
turates, narcotics or alcohol may po-
te hypotension. Because of the possi-
of progression of renal damage, peri-
determination of the BUN is indicated.
ntinue if the BUN rises or liver dysfunc-
s aggravated. Hepatic coma may be
itated.

rolyte imbalance, sodium and/or potas-
depletion may occur. If potassium deple-
hould occur during therapy, Hygroton
d be discontinued and potassium sup-
ents given, provided the patient does
ave marked oliguria.

special care in cirrhosis or severe
mic heart disease and in patients re-
g corticosteroids, ACTH, or digitalis.
estriction is not recommended.

se Reactions: Nausea, gastric irritation,
ing, anorexia, constipation and cramp-
izziness, weakness, restlessness, hy-
ycemia, hyperuricemia, headache, mus-
ramps, orthostatic hypotension, aplastic
ia, leukopenia, thrombocytopenia,
ulocytosis, impotence, dysuria, transient
ia, skin rashes, urticaria, purpura, nec-
ng angiitis, acute gout, and pancreatitis
epigastric pain or unexplained G.I.
toms develop after prolonged adminis-
n. Other reactions reported with this
of compounds include: jaundice, xan-
ia, paresthesia, and photosensitization.

ge Dosage: One tablet with breakfast
or every other day.

ability: White, single-scored tablets of
g. and aqua tablets of 50 mg., in bot-
f 100 and 1000. (B)46-230-D

ll details, please see the complete
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Chemical Corporation
ey, New York

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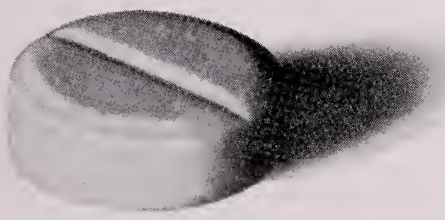
to go with the Hygroton 100 mg. you know



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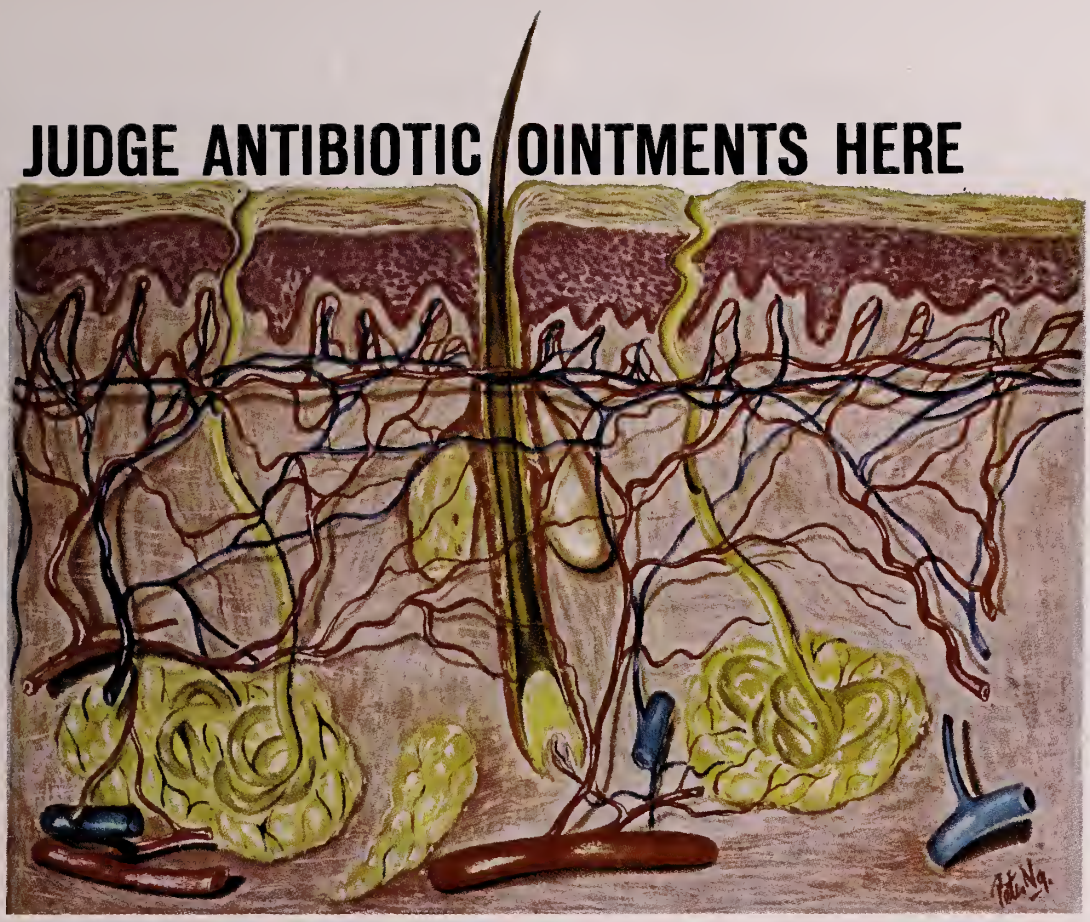

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Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

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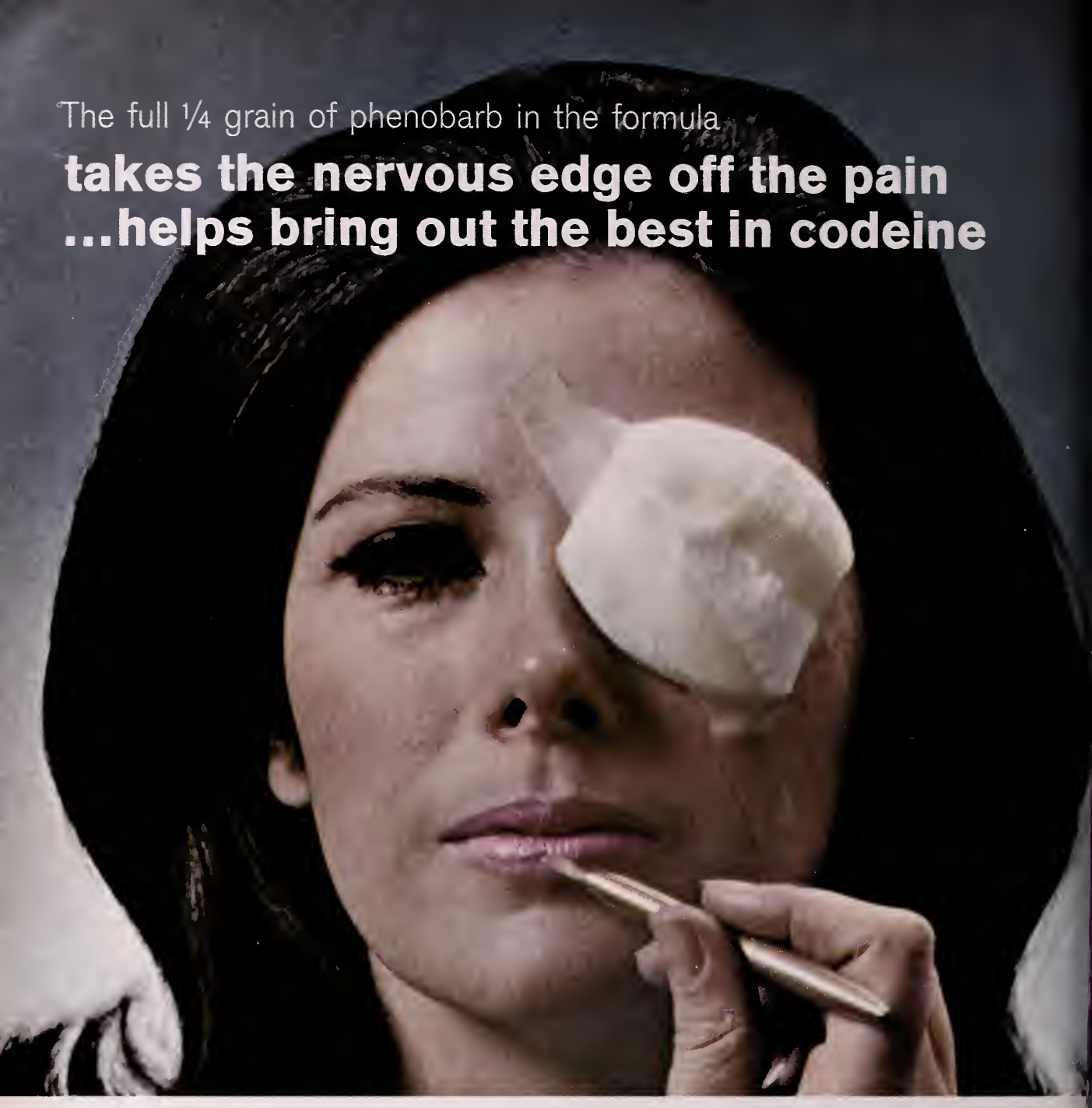

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Codeine phosphate.....¼ gr. (No. 2), ½ gr. (No. 3), 1 gr. (No. 4)
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Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

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A. H. ROBINS CO., INC., Richmond, Va. 23220

fall 1967

DORSEY

Season

A journal within a journal published quarterly in the interests of better medicine by Dorsey Laboratories, a division of The Wander Company, Lincoln, Nebraska. Address communications to Raymond C. Pogge, M.D., Director of Medicine.

this issue: smog, smaze or smust...

Smog, smaze or smust...effects of air pollution on upper respiratory tract

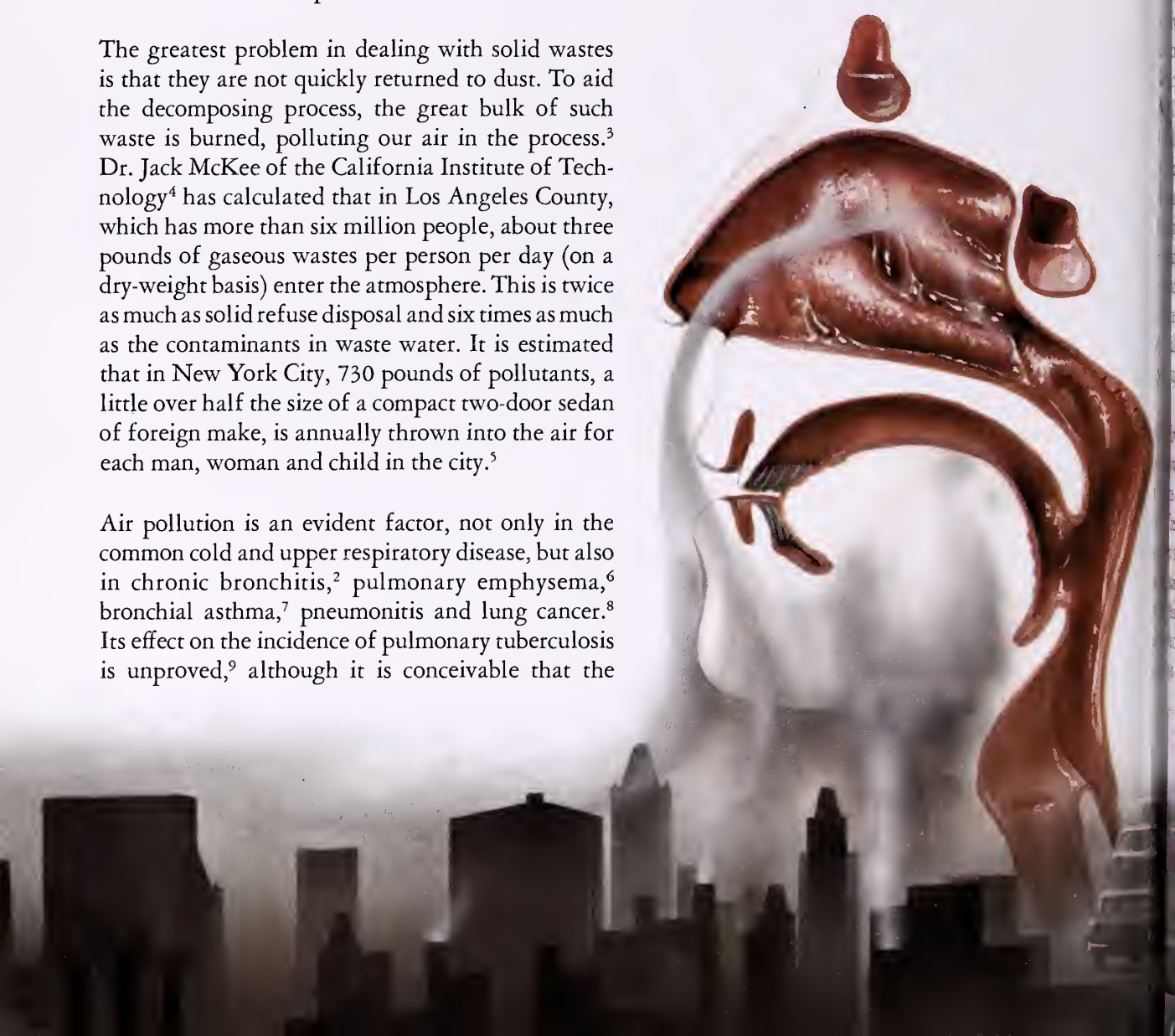
Nathan Flaxman, M.D., Diplomate, American Board of Internal Medicine, Chicago, Illinois

In Los Angeles it is *smog* (smoke and fog). In New York City *smaze* (smoke and haze). In El Paso *smust* (smoke and dust). The original factor was smoke plus such natural phenomena as fog, haze and dust, but air pollution has mushroomed from a smoke problem in our industrial cities into a major economic, esthetic and public health problem that affects practically every American locality and citizen.[1,2] Respiratory disease, of course, is by far the most costly effect of air pollution, for contaminated air can aggravate our illnesses, deplete our strength and shorten our life span.[1]

The greatest problem in dealing with solid wastes is that they are not quickly returned to dust. To aid the decomposing process, the great bulk of such waste is burned, polluting our air in the process.[3] Dr. Jack McKee of the California Institute of Technology[4] has calculated that in Los Angeles County, which has more than six million people, about three pounds of gaseous wastes per person per day (on a dry-weight basis) enter the atmosphere. This is twice as much as solid refuse disposal and six times as much as the contaminants in waste water. It is estimated that in New York City, 730 pounds of pollutants, a little over half the size of a compact two-door sedan of foreign make, is annually thrown into the air for each man, woman and child in the city.[5]

Air pollution is an evident factor, not only in the common cold and upper respiratory disease, but also in chronic bronchitis,[2] pulmonary emphysema,[6] bronchial asthma,[7] pneumonitis and lung cancer.[8] Its effect on the incidence of pulmonary tuberculosis is unproved,[9] although it is conceivable that the presence of various materials polluting the air migl do this. A siege of smog in Denver, the "mile hig city," in December 1965 was accompanied by resp ratory infection that doubled normal absentee rat in schools, factories and city government.[10]

While air pollution is only one factor, it has becom important in the causes of most of the afflictions o the respiratory tract. This has been shown not on by the Denver occurrence, but also by detailed stud of respiratory illness in a small group of 313 me



om October 1962 to May 1963 when there were)2 episodes involving the upper respiratory tract. he attack rate of illness was related in time to in- eased concentration of both smoke and sulphur oxide in the atmosphere of the district in which e men lived.

ther factors often mentioned, include exposure to ose who have colds, exposure to extreme changes temperature, allergy and bacterial infection. owever, when low individual resistance due to ck of rest, overwork, fatigue, improper or unbal- ıced diet, previous illness and emotional stress are cluded as causes, we enter the realm of somewhat)scure relationships. Much more emphasis can be aced on the role of polluted air.

e symptoms, signs and complications of involve- ent of the upper respiratory tract, especially the)mmon cold, are the same regardless of the causa- ve factor. Swelling of the lining of the nose, the ratchy dry throat, the discharge from the nose at st watery then thicker, discolored and more tena-)us, the eyes tearing, and frequent sneezing are l part of the Number 1 human ailment. Concur- nt or residual sinusitis when mucus is trapped ere, middle ear involvement due to interference ith drainage, laryngitis and bronchitis are compli- tions of the common cold. The primary interfer- ce is with a most important function of the nose— e cleansing of foreign matter in the first line of ir defense" to prevent it from entering the breath- g tract.

owever, the diagnosis and subsequent decision on)w to treat the patient so affected rests basically on e relief of symptoms that cause him the misery. ne stuffed, runny nose, the clogged ears, and the rsh dry cough—all the symptoms that make com- on cold sufferers feel miserable and interfere with eir sleep—can be alleviated with medications of e oral nasal decongestant/antihistamine combina-)n type. The burning sensation in the throat, sore-

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Each teaspoonful (5 ml.) contains:

Phenylpropanolamine hydrochloride	12.5 mg.
Pheniramine maleate	6.25 mg.
Pyrilamine maleate	6.25 mg.

For nasal congestion regardless of cause, you can bring quick, lasting comfort to your little patients with Triaminic Syrup. You may occasionally encounter these side effects: drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: the possibility of drowsiness should be considered by patients engaged in mechanical operations requiring alertness. Use with caution in patients with hypertension, heart disease, diabetes, or thyrotoxicosis.

(Advertisement)

ness of the chest and even chest pain can also be relieved by such medication. Rest in bed if there is fever (but confined to home at least), liberal fluids, uniformly warm surroundings and adequate humidity in the room, are all helpful adjuncts to the medication. Most common cold sufferers recover rapidly and are symptom-free in four to ten days.

Further treatment, altered by the fact that the affliction hangs on for more than the usual duration of the common cold, requires consideration of allergy, which is most frequently the prolonging factor. But air pollution itself may often be the culprit.

(Concluded on following page)

At the Third National Conference on Air Pollution held recently, it was emphasized that this subject had received more attention in the past four years than in all previous history. Spicer,[11] an active participant at this conference, reiterated that it behooves the practicing physician to be aware of trends in respiratory disease and to accept a major role in community action relating to air pollution and respiratory health. By taking a positive stand physicians have been instrumental in the development of anti-pollution legislation. An outstanding example is Los Angeles where major steps have been taken by abolishing coal burning, and even banishing oil burning, seven months a year. Natural gas must be used instead and it must be used by industry when available. Backyard incinerators have been abolished in favor of landfill disposal, and building incineration ended except for a few expensive smokeless furnaces.[10] Concerted action can be taken against particular industrial nuisances. One company that disregarded complaints discovered its error when thousands of its credit cards were returned by irate customers who decided to patronize competing companies.[12]

Summary. Respiratory disease is the most important and most costly effect of air pollution, whether termed smog, smaze, or smust. Air pollution is an economic, esthetic and public health problem that affects practically every American locality and citizen. New sources of air pollution are invisible and odorless, but the harmful gases and liquid droplets are there. Triggered by sunlight, some of these undergo mid-air chemical changes and the results are even more irritating to the upper respiratory tract. The symptoms, signs and complications, especially of the upper respiratory tract, can be readily aborted by modern medication but may be unduly prolonged by polluted air. In steps taken to prevent this, the practicing physician can take a major role.

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**a potent injectable non-narcotic—
may be used in place of morphine
and other narcotic analgesics**

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Talwin 30 mg. relieves pain usually as quickly and effectively as morphine 10 mg.*

whatever the intensity of the pain

whatever the cause of the pain

whatever the site† of the pain

whatever the chronicity of the pain

whatever the age†† of the patient

without the liability of narcotics

without the development of tolerance on prolonged use

with less risk of severe respiratory depression than with morphine

with less constipation

with less urinary retention

Clinical experience of more than 150 investigators with over 12,000 patients given varying dosages of Talwin shows that this potent injectable analgesic is not a narcotic.

Talwin has less risk of severe respiratory depression, urinary retention, and constipation than morphine—a great boon for postsurgical patients.

Talwin produces less nausea, vomiting and diaphoresis than meperidine.

Constipation and urinary retention are seldom a problem with Talwin.

Very rarely do hallucinations or disorientation occur (0.1% each).

No significant hepatic, renal, hematopoietic or neurologic disturbances have been reported.

Talwin is well tolerated even by the aged or very ill patients.

Used during active labor, its tolerance by the mother and newborn is comparable to meperidine's. As with all new drugs, Talwin should be used with caution in pregnant women and in women delivering premature infants.

Tolerance to the analgesic effect of Talwin has not developed with prolonged use.

Talwin gives significant relief of pain in from 15 to 20 minutes following I.M. or S.C. injection.

Talwin relieves pain usually for 3 hours or longer with a single injection; however, the duration may sometimes be less than with morphine.

*Its duration of action may sometimes be less than that of morphine.

†Should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.

††Until sufficient experience is gained, Talwin should not be administered to children under 12 years of age.

86 per cent of medical and surgical patients obtained excellent to good relief with Talwin 30 mg. administered parenterally

alwin
and of pentazocine (as lactate)
ised for pain of all types

alwin has a wide range of sefulness in surgery

pes of surgical use	Number of patients	Efficacy % Exc.	% Good	Exc. + Good	% Fair	% Poor
reoperative	118	31	52	83%	15	2
ostoperative	914	58	28	86%	8	6
re- and postoperative	12	75	17	92%	0	8
Minor surgery	33	30	39	69%	0	31*
raumatic	14	64	29	93%	7	0
ental	33	67	24	91%	3	6
Total patients.....1124						

ficacy of 30 mg. Talwin I.M. and S.C. as related types of surgical use in a cooperative study

ta in files of Department of Medical Research, Winthrop Laboratories.

gh incidence of poor results in minor surgery is due primarily to one dy involving change of burn dressings in children; 9 of 19 patients obned poor results with dose used.

alwin relieves all types f pain in acute and hronic medical disorders

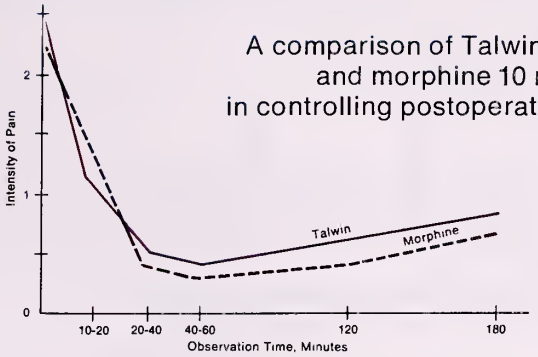
e of medical pain	Number of patients	Percentage of relief Excellent	Good	Exc. + Good	Fair	Poor
alignancy, pain in	161	44	37	81%	8	11
rthopedic; see also "Arthritis"	111	53	38	91%	5	4
ardiovascular pain; see also "Miscellaneous medical"	96	59	27	86%	6	7
enitourinary pain	83	42	33	75%	16	10
rthritis	76	33	51	84%	12	4
ynecologic pain	35	57	34	91%	6	3
ephalalgia	21	45	41	86%	9	5
astrointestinal pain	19	89	5	94%	0	5
hest, including • Pleurisy • Pulmonary embolism and infarct • Lung abscess	12	83	17	100%	0	0
iscellaneous medical, including • Peripheral vascular disease • Thrombophlebitis • Cervical root pain • Facial neuralgia • Syringomyelia • Burns	108	50	39	89%	9	2
Total patients.....722						

ficacy of 30 mg. Talwin I.M. and S.C. as related types of medical pain in a cooperative study

a in files of Department of Medical Research, Winthrop Laboratories.

e next page for additional product information

Talwin relieves pain as quickly as morphine



A comparison of Talwin 30 mg. and morphine 10 mg. I.M. in controlling postoperative pain*

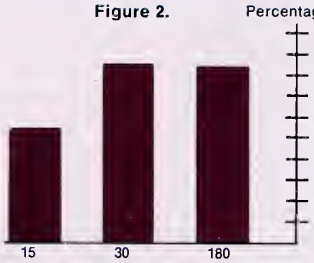
Figure 1.

Talwin 30 mg. proved equivalent to morphine 10 mg. in overall analgesic efficacy. During the early postmedication period (up to 40 minutes after drug injection), Talwin was superior in effect to morphine.

After observation periods ranging from 40 to 180 minutes there was no difference between the drugs in their effect on intensity. There were 141 and 119 complete patient records for Talwin and morphine, respectively, in this double-blind study. Other clinical investigators, studying duration, state that relief with Talwin may be obtained for up to three hours or longer, a period sometimes less than morphine's.

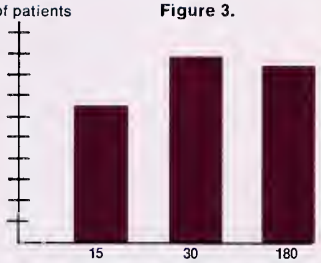
Talwin is as effective for severe pain (Fig. 2)† as for moderate pain (Fig. 3)†

Figure 2.



Per cent excellent to good relief of severe pain obtained with 30 mg. Talwin in 218 postoperative patients

Figure 3.



Per cent excellent to good relief of moderate pain obtained with 30 mg. Talwin in 203 postoperative patients

Talwin does not require a narcotics prescription or narcotics records

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "...there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally."‡

*Storer, E. H.: Data in the files of the Sterling-Winthrop Research Institute.

†Cooperative study, data in the files of the Department of Medical Research, Winthrop Laboratories.

‡*World Health Organization Technical Report Series*, No. 343, 1966, p. 6.

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Contraindications: *Increased Intracranial Pressure, Head Injury, or Pathologic Brain Conditions in which clouding of sensorium is undesirable.* Talwin (brand of pentazocine) should not be administered in these cases, since drug-induced sedation, dizziness, nausea, or respiratory depression could be misleading.

Precautions: *Pregnancy.* No teratogenic or embryotoxic effects attributable to the use of Talwin have been seen in extensive reproductive studies in animals; however, like all new drugs, Talwin should be given with caution to pregnant women. A large number of patients in labor have received the drug with no adverse reactions other than those that occur with commonly used strong analgesics. However, as with other strong analgesics, Talwin should be used with caution in women delivering premature infants.

Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.

Certain Respiratory Conditions. The possibility that Talwin (brand of pentazocine) may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.

Patients Dependent on Narcotics. Because Talwin is a narcotic-antagonist, patients dependent on narcotics and receiving Talwin may occasionally experience certain withdrawal symptoms. Talwin should be given with special caution to such patients. It has been observed that some patients previously given narcotic-analgesics for one month or longer had mild withdrawal symptoms when the drug was replaced with the analgesic, Talwin. After a short period of adjustment the subjects were usually able and willing to continue taking Talwin, and relief of pain was satisfactory.

Nonaddicted Patients Receiving Narcotics. Symptoms believed to be indicative of antagonism to the opiate may be observed rarely with administration of Talwin to patients receiving opiates for a short time. Intolerance or untoward reactions are seldom observed after administration of Talwin to patients who have received single doses or who have had limited exposure to narcotics.

Impaired Renal or Hepatic Function. Although laboratory tests have not indicated that Talwin (brand of pentazocine) causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.

Myocardial Infarction. As with all drugs, Talwin (brand of pentazocine) should be used with caution in patients with myocardial infarction who have nausea or vomiting.

Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.

Adverse Effects: Talwin is relatively free from the undesirable side effects associated with morphine, such as constipation, urinary retention, or severe respiratory depression. Furthermore, Talwin produces less nausea, vomiting, and diaphoresis than meperidine.

In over 12,000 patients who received Talwin intramuscularly, subcutaneously, or intravenously, nausea, the most frequent adverse effect occurred in approximately 5.0 per cent. In decreasing order of occurrence were vertigo, dizziness or lightheadedness; vomiting; and euphoria. Respiratory depression was reported as an adverse reaction in 1.0 per cent.

The incidence of each of the other adverse effects was well below 1.0 per cent: constipation, circulatory depression, diaphoresis, urinary retention, alteration in mood (nervousness, apprehension, depression, floating feeling), hypertension, sting on injection, headache, dry mouth, flushed skin including plethora, altered uterine contraction during labor, dermatitis including pruritus, dreams, paresthesia, and dyspnea occurred rarely after administration of Talwin (brand of pentazocine). Furthermore, each of the following adverse reactions occurred in less than 0.1 per cent: tachycardia, visual disturbance (blurred vision, diplopia and nystagmus), hallucinations, disorientation, weakness or faintness, muscle tremor, chills, allergic reaction including edema of the face, taste alteration, insomnia, diarrhea, cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adults (never apnea), even with large amounts. A small number of newborn infants whose mothers received Talwin during labor had transient apnea. The incidence of temporary diminution in the rate or strength of uterine contractions is low after administration of Talwin, similar to that following meperidine hydrochloride. (In reporting no interference with normal labor in patients receiving Talwin, one investigator further stated that the drug may increase uterine activity.) Generally, no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have revealed no significant abnormalities. A minimum and probably insignificant increase in the per cent of eosinophils in peripheral blood counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and no changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Excluding Patients in Labor.* Average recommended single parenteral dose is 30 mg., by intramuscular, subcutaneous, or intravenous route; may be repeated every three or four hours. Pain has been relieved in most patients with not more than three doses daily. Infrequently, selected patients have received single doses as high as 60 mg.

Patients in Labor. A single, intramuscular 30 mg. dose has been most commonly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin (brand of pentazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talwin for prolonged periods (e.g., over 300 days) experienced no withdrawal symptoms even when administration was stopped abruptly; furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has rarely produced apnea or severe respiratory embarrassment in adults, even in large doses. Occasionally, however, moderate respiratory depression may occur. Means of maintaining proper oxygenation should be available in case of overdosage or respiratory depression, and methylphenidate (Ritalin®) should be administered parenterally. The use of narcotic-antagonists, such as nalorphine, are not effective respiratory stimulants for depression due to Talwin.

How Supplied: Ampuls of 1 ml., containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base and 2.8 mg. sodium chloride, in Water for Injection. **Boxes of 10, 25, and 100.**

Multiple dose vials of 10 ml., each 1 ml. containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base, 2 mg. acetone sodium bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as preservative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide.

Winthrop

Winthrop Laboratories, New York, N.Y. 10016

PRINTED IN U.S.A. ISSUED AUGUST, 1967

A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .

Consider starting your hypertensives on this basic thiazide

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE

DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!

Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

707075-R

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

ABBOTT

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

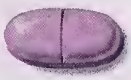
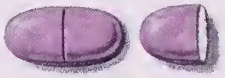
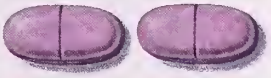
A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions.* Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE				
	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

TM—Trademark

707075-R

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains Methyclothiazide 5 mg. with Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL® | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains Pargyline Hydrochloride 25 mg. with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-Trademark.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅓ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

709075R

ABBOTT

Before prescribing, see complete prescribing information in SK&F literature or *PDR.* A brief precautionary statement follows.

Contraindications: Glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal obstruction, or bladder neck obstruction.

Precautions: Use cautiously in the presence of hypertension, hyperthyroidism, coronary artery disease; warn vehicle or machine operators of possible drowsiness.

Usage in Pregnancy: Use cautiously, especially in the first trimester. *Note:* The iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake; discontinue 'Ornade' one week before these tests.

Adverse Reactions: Drowsiness; excessive dryness of nose, throat or mouth; nervousness; insomnia. Other known possible side effects of the individual ingredients: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, difficulty in urination. Thrombocytopenia, leukopenia and convulsions have been reported but no causal relationship has been established.

a stuffy nose is no laughing matter

Ornade® Trademark

Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

Spansule® Capsules

brand of sustained release capsules

each one can give him all-day or all-night relief

SK&F Smith Kline & French Laboratories

DUAL PROBLEM IN PEPTIC ULCER

Relief of hyperacidity is still a primary goal in the treatment of peptic ulcer. And antacids are the most widely used means of achieving this relief. But antacids alone cannot influence the distention and bloating which so often add to ulcer distress.

THIS IS WHY MYLANTA® PROVIDES:

the two most widely used antacids—magnesium and aluminum hydroxides—to help secure rapid acid neutralization with little chance of laxation or constipation;

PLUS

the defoaming action of simethicone—to help relieve the painful gas symptoms which often accompany peptic ulcer.

Mylanta®

antacid therapy plus an added benefit

nonfatiguing flavor/smooth pleasant texture; both assure patient cooperation during long-term therapy.

Stuart Division of / ATLAS CHEMICAL INDUSTRIES, INC. / Pasadena, Calif.

following infection

B and C vitamins are therapy: STRESSCAPS B and C vitamins in therapeutic amounts... help the body mobilize defenses during convalescence... aid response to primary therapy. The patient with a severe infection, and many others undergoing physiologic stress, may benefit from STRESSCAPS capsules.

Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:	
Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
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Medical Myopia

MORE THAN A YEAR has passed since Medicare has become law. We have seen that, despite its shortcomings, it is a good law providing the opportunity for many to obtain needed medical care that for one reason or another was denied them. How else can we explain the increase in utilization of hospital facilities since July 1, 1966? And while the writer has seen no statistical evidence, there is reason to believe that utilization has increased in office care.

The failure of medical leadership and of physicians in general to recognize this need and to act on it has led us to medical care by law. What we could not see, could not be—we thought. This was Medical Myopia.

Our approach to this new way of life has not been gracious, nor has it been intelligent or far-seeing. Rather than accept the facts and start to look to the future, we have become ensnarled in a nit-picking process . . . pointing out the faults in the law, (and it is not perfect; it will need amending, as did even the Constitution). In so doing, we risk deluding ourselves that these minutiae are the important end—and, in our myopia, fail to appreciate the greater problem. Attempts to enlarge the present program were predictable before passage of the original act and are even now in process. We must examine each attempt carefully and evaluate the need. Every attempt to expand may not be all bad. Indeed, the more positive approach is to be preferred—careful consideration of the need and with the proposal for change emanating from the profession. Looking not to tomorrow, but to 20 or 30 years from now, let us hope to care for those who have been second class medical citizens on a dignified, courteous, and satisfactory (to patient as well as physician) basis. We will then have taken the greatest single step in preservation of our freedom.

For others in our community for whom the rising costs of total medical care will soon become too much to bear, we must begin diligently working with the insurance industry to provide realistic pre-payment plans. Realistic in regard to premium costs; realistic in regard to benefits provided! The realism provided here is in regard not only to fees, but more particularly to the panoply of services provided and the site of rendering of services. Benefits should encompass the entire spectrum of disease to which man is heir, without restriction and without the exception of prior existence. To ease the pressures in hospital beds and to render services more cheaply, provision for out-patient diagnostic services will be a must. It is, I believe, obvious that to do these things we must work more closely with the insurance industry than ever before. There may well have to be developed committees representing both medicine and insurance to define basic minimum standards for all contracts to be written. Other committees must insure the purveyor that he is indeed underwriting a quality product—that the service rendered was needful and well done. It may become necessary for the several companies to share the "bad risk" problem by way of a pool, as in automobile driver insurance.

These things can be done, and I feel in some fashion must be done, if we are to prevent the steady encroachment of government on medical practice. As medical care costs continue to rise and people find greater difficulty in meeting and in providing for the unwanted catastrophe, greater and greater demands will surely be made for somebody to do something about it. And be done it will—if not by us, by a benevolent Big Brother!

Lest we slip in our contacts, take a long, clear look at the road ahead, and prepare to work for our freedom or accept serfdom.

Harry J. McKinnon, Jr., MD*

*Editor, Nevada Section of the Rocky Mountain Medical Journal.

Cover Story

TURN-OF-THE-CENTURY home delivery medical bag; utilized by a Nevada physician until World War II. The two snaps shown in the false bottom of the bag released a pan containing forceps and other instruments ready for sterilization for home deliveries. Ether mask, stethoscope, needles and needle holders, hemostats, sutures and scissors were a part of the bag's contents as well as such drugs as ether, urgotrate, pituitrin, syringe and morphine tablets and at times other drugs and medications. The drugs shown in dispensing case in foreground are even older, and include such medications as "all healing powder," "heart cure tablets," "dyspepsia, heart burn and indigestion pills," "malaria, chills and fever powders," "squills mixture," "carbolic acid," "sore throat tablets," "nerve tablets, No. 16," "colds in head, pneumonia and fever pills," quinine, morphine, "kidney and bladder tablets," "bleeding powder No. 19," "syphillis cure No. 17." The label on each vial not only contained direction for administration but also a brief identification of the drug and a description of the disease against which the drug was supposed to be a specific.

Medical Library Association Prize Essay

WE ARE PLEASED TO NOTE that the Murray Gottlieb Prze for the best essay submitted upon some phase of medical history in America went to Miss Marjorie Wannarka. She is the librarian in the School of Medicine, Creighton University, Omaha and the author of the interesting article in our June issue entitled "History of a Medical Collection Housed in the Denver Public Library 1893-1899." The title of her essay was "Medical Collections in Public Libraries of the United States: A Brief Historical Study."

If you missed her article concerning history of the Denver Medical Library, you would find it worthwhile reading.

Nevada Removes Student Practice Requirement

Governor Paul Laxalt of Nevada has signed into law a bill removing the practice requirement as a stipulation for Nevada students attending professional schools in other states under the WICHE Student Exchange Program. Wyoming removed its practice requirement earlier this year.

Nevada currently has 29 students attending professional schools in other western states under the WICHE program: 11 in medicine, 10 in dentistry, and 8 in veterinary medicine.

There has been a growing concern among school officials and others that the requirement for the student to return to his home state to practice his profession has caused students to withdraw from the WICHE program. In 1966 there were three times as many withdrawals from the program by students living in states with practice requirements as from other states. At that time there were four states with the requirement. Currently, only Arizona and Idaho continue the requirement.

The Nevada WICHE Commissioners were instrumental in securing the legislative action. Nevada Assemblyman Frank Young introduced the bill in the Assembly and appeared on its behalf in the Senate. The Nevada Commissioners are: Dr. Juanita Greer White, Boulder City; Fred M. Anderson, M.D., Reno; Dr. Charles J. Armstrong, president, University of Nevada, Reno.

"How can I stay out of legal trouble?"

Justice John C. Mowbray, Las Vegas, Nevada

A summary of medico-legal problems as viewed from the bench.

No one can guarantee immunity from legal problems. The best way for the young physician to minimize such problems is to practice good medicine and good human relations. Awareness of the basic factors of the legal aspects of medical practice, however, may also be of some prophylactic value. In first year law school, one of the professors gave us some sage advice: "When you get into practice," he said, "you will find three kinds of clients. One kind gets into trouble and then comes to his lawyer for help. You don't have to worry about this kind of client. You just do what you can to help him. The second kind is the client who comes to you for advice and then ignores the advice. He isn't much of a problem either. The third kind comes to his lawyer for advice before he takes any action and then follows that advice. He's the one you really have to worry about."

Every lawyer has had the experience of someone saying to him, "if I do so-and-so, can I be sued?" Let's get this problem clear. Anybody can be sued at any time for anything. All that it takes is one person who wants to cause trouble and who is willing to spend the $35.00 required as a filing fee. He doesn't even need to have a lawyer to file the suit for him. Of course, his chances of success in the suit are much greater if he does have a lawyer. But a lawyer won't want to waste his time filing a suit unless there is a reasonable chance of winning or getting a settlement.

These practical considerations tend to keep the risk of litigation at a reasonable level. Thus, the real question is: "How great are the risks of a judgment against me?" Physicians have legal risks like everyone else. And, like everyone else, physicians are apt to believe that their legal risks are overwhelming. I don't want to minimize the risks; but, on the other hand, I think it is dangerous to exaggerate them. I believe that a realistic way to evaluate the risks is on the basis of exposure.

Each time that a physician sees a patient there is a possibility that something may happen which will result in a legal claim against the physician. Assuming the conservative figure of 15 patient visits a day, the average physician will have 151,200 instances of exposure during his lifetime. A survey made in 1966 showed that, on the average, one legal claim is made for every 269,960 physician-patient visits. This is a risk rate of less than four ten-thousandths of one per cent. The incidence of claims, of course, is higher in some specialties than in others, but the variation is not great and the risks are not unmanageable. Besides, insurance is available.

Some physicians run afoul of the law solely because they don't know the law. Ignorance of the law, of course, is no excuse. A physician should know how the law affects him in the practice of medicine, at least to the extent of the more important fundamentals. These include: the nature of the

* Address to the Woman's Auxiliary of the Clark County Medical Society. The author is now Justice of the Supreme Court of Nevada. He served as Presiding Judge, for the last three years, of the 8th Judicial District Court for the State of Nevada in Las Vegas.

physician-patient relationship; consent for medical treatment; standards of medical care; hospital staff privileges; license to practice medicine; legal restrictions on medical practice; and medical testimony. I will cover the highlights of these subjects. I hope to whet your interest so that you will continue to expand your knowledge of the legal side of medical practice. You can do this through your reading, through formal classses or lecture programs presented by medical schools and teaching programs, through medical society presentations, and through your own participation in local medico-legal committees.

Physician-Patient Relationship

Now let's take a close look at the legal side of medical practice. Just as care of the patient is the fundamental principle of medicine, so the physician-patient relationship is the keystone of law relating to your profession. Let's assume that Dr. Smith has received his license to practice medicine from the State of Nevada, has opened an office on Las Vegas Boulevard South, and is sitting there calmly waiting for his first patient to arrive. As a physician, does he have any legal obligation to anyone? The answer is, "no." Under the law, Dr. Smith has a right to reject anyone who seeks his professional services. He can refuse to practice medicine altogether, if he so chooses. No one can successfully sue him for doing so, except perhaps his wife for nonsupport. The physician-patient relationship is a contractual one. This means that it is established by mutual agreement between the parties. The physician must agree to accept the patient and the patient must agree to accept the physician, or there is no contract. At this point, you might think that the first thing you would need in opening your medical office would be a supply of physician-patient contract forms.

Lawyers, as you know, like to have everything in writing. But we don't always get our way. Frankly, I have never seen a contract form of this sort; and I don't think you could find one if you searched every medical supply or legal supply establishment in the United States. As a matter of plain fact, written contracts for medical services are almost unheard of. But in law, an oral contract is usually just as binding as a written contract. It may be harder to prove, but it's just as binding. Suppose Mr. Jones comes into Dr. Smith's office and says, "Doc, I want you to be my physician." If Dr. Smith says O.K., we have an express oral contract. Even this is more than is necessary. We lawyers recognize something that is called an implied contract. If two people act in such a way that it can be reasonably inferred that they are mutually agreeing to a certain course of action, their actions are usually enough to establish a contract. For example, if you go into a grocery store, pick up a loaf of bread, carry it to the check-out counter, offer a dollar bill and accept the change, you have entered into a legally binding contract of sale, even if no words are spoken.

By the same token, if Mr. Jones comes into Dr. Smith's office with a bad cut on his hand which he shows to the physician, and if Dr. Smith examines the cut, cleans it, administers antibiotics, and applies a bandage, an implied contract establishing a physician-patient relationship has been entered into, even if no word is spoken. Since a contract is involved, it must be remembered that not all persons are legally competent to enter into a contract. Among those who are not competent are persons who have been adjudged to be mentally incapable of handling their own affairs, and infants. In these cases, some other person, a guardian or parent, is given authority to act for them. Also, persons who are unconscious cannot enter into a contract, but this involves special considerations which will be discussed later.

As far as the existence of the physician-patient relationship is concerned, payment is not essential. If the physician undertakes to diagnose or treat a person, the relationship exists with that person, regardless of whether he is paid by someone else or agrees to furnish his services without charge. You will have noticed that there are a few, if any, specific terms and conditions governing these unwritten contractual physician-patient relationships. Where situations like this occur, the law typically steps in to supply the missing terms. The first term, you will be glad to hear, is that the patient will pay the

reasonable value of the physician's services. This is rather vague, but at least he agrees to pay something. In practice it works out something like this: The physician bills the patient, who either pays or does not. If he does not, the physician decides whether it's worthwhile to sue. If he sues, he will have to present evidence as to what is a reasonable fee. This will probably be in the form of testimony from other physicians in the community. The jury or the judge will then decide what amount is reasonable. This problem, of course, can be avoided to a large extent if the physician announces his fees in advance.

Other terms imposed by law are largely those which create obligations on the physicians. The law requires him to act toward the patient like a trustee. He may not take advantage of the patient in this relationship in any way. He must not withhold from the patient any medical information necessary for the patient's health or welfare. He must not disclose information to others about the patient's health or personal life without the patient's consent, unless disclosure is required by law or by overriding considerations of public policy. The physician also has a continuing obligation once he has accepted a patient. The patient can discharge the physician at any time, but the physician can end the relationship only by giving advance notice which allows the patient a reasonable period of time to obtain the services of another physician, if such services are needed. In the absence of such discharge or termination, the physician-patient relationship remains as long as the need for continuing medical care exists.

Standards of Skill

I have left to last the most important condition implied by law—that is the standard of skill and care required of the physician. It may surprise you to learn that you are not required to give the highest degree of skill and care. I know that everyone of you intends to give every patient the best possible care. If nothing else, however, the law is realistic. It recognizes that everyone can't be the top man in his field and that all of us have our off days. The law, therefore, requires the physician to possess and exercise that degree of skill and care that is ordinarily possessed and exercised by physicians of the same professional status in the same or a similar community in the same or similar circumstances. This means that a GP is measured against other GP's—a specialist against others in the same specialty. Your colleagues set the standard—not the best of them or the worst or the average, but the general run.

Also, if circumstances force you to operate in your office, you are not judged by what other physicians would do in a hospital. The community element is no longer as important as it once was, but still the physician in Caliente is not going to be judged by the standards prevailing in Philadelphia. Now you know what malpractice is. It isn't a sin. It isn't a crime. It isn't something malicious. It is merely the failure of a physician to conform to this standard of reasonable skill and care. If a court or jury finds that he did not so conform, it means that he will have to pay damages. It doesn't mean that he is an incompetent physician. Believe me, it happens to the best of them. Never forget that!

"Malpractice" is an evil-sounding word. It's too bad it ever came into use, but it's too late to do anything about it now. But please remember, it isn't as bad as it sounds. No physician has ever had his professional reputation destroyed by a malpractice judgment. But malpractice is only one way in which a physician can get into legal trouble. Several other ways also arise out of the contractual nature of the relationship.

First it should be noted that the obligations imposed by law can be modified by express agreement. If the physician agrees to treat the patient without charge, he cannot later collect compensation for his services. If the physician gives the patient advance notice that he does not make house calls, he cannot be held liable for not doing so. If there is express agreement, the physician can limit his legal obligations. He can agree to be bound by a higher standard of care than that imposed by law, but it isn't clear whether a lower standard can be established by contract.

Abandonment is one of the additional bases for legal trouble. If a physician terminates his care of a patient without giving the required notice while the patient is still in need of care, he is liable for all resulting injury to the patient, even though the care he gave previously was up to the required standard. Physicians seldom really abandon patients, but sometimes they are accused of abandonment through misunderstanding. Here is where some legal protection is necessary. Any time a physician has to terminate treatment of a patient who still needs medical care, he should send the patient a written notice in the form of a letter and keep a carbon copy in his file. The letter should state that the physician is terminating his responsibility for the patient as of a specified future date, but will be available to furnish necessary care upon request until that date. The date should be far enough in advance to give the patient a chance to get another physician. The letter should advise the patient that continuing care is advisable, if that is the case, and that he should arrange for the services of another physician as soon as possible. The reason for the termination need not be given, but it may be if it is unlikely to create antagonism.

Termination of patient care

Also, the physician needs legal protection if the patient discharges him. If the patient does so by letter, the letter should be kept in the file. If he does so orally, the physician should confirm this by a letter to the patient, with a carbon copy for his file. It might read something like this:

"It is my understanding that you discharged me today, November 5, 1966, as your physician. Accordingly, my responsibility for your future medical care terminated as of that time. If you did not intend to discharge me, please so advise not later than November 9, 1966."

If the patient requires continuing medical care, he should also be advised to arrange for the services of another physician as soon as possible. Similarly, a patient may just stop coming back to the physician's office without saying anything. If he is in need of continuing medical care, the physician might get in trouble if he doesn't protect himself. This situation can be handled by sending a letter along these lines:

"Since you failed to keep your appointment on November 5, 1966, I am forced to assume that you no longer wish to be under my care. If this is correct, I must advise you to arrange promptly for the services of another physician, since your condition is such that you are still in need of continuing medical care. If you wish to continue under my care, you will make arrangements with my office, not later than November 9, 1966, for a new appointment."

Another possible source of trouble is the legal doctrine of "breach of warranty." Ordinarily, a physician is not responsible merely because a patient does not get well or suffers an adverse effect from treatment. But he may be responsible if he promises favorable results and they do not occur. You may be asking yourselves, "who would be foolish enough to guarantee the results of medical treatment?" With your knowledge of the uncertainty of medical prognosis, it is unlikely that you would intentionally do so. All of us, however, use loose language occasionally and sometimes this can trap us.

Because of the nature of the relationship, a patient has a right to rely on what his physician tells him. This is true more so than in any comparable business relationship. The trap may be set when the physician is trying to calm the patient's fears for the patient's own benefit. He may say, "you will be as good as new after this treatment," or "there is no danger," or "we'll have you well again in no time." I'm not saying that these careless statements will always be interpreted literally.

Where the outcome of treatment is disastrous to a patient, despite the physician's best skill and care, however, something like this may give a jury the opportunity to show its sympathy for the patient. The jury has the duty to decide, in the light of all the evidence, whether the physician made any promise about results and whether the patient had a right to rely on the promise. How can the physician avoid this trap?

First he must avoid using words that can be interpreted as promises or assurances. He should be able to calm the patient's fears with statements of general facts about the past rather than specific predictions about the future. He must, of course, be truthful. In contrast to the language quoted above, he might say, "in many cases similar to yours, this treatment has been very successful," or "past experience with this drug has shown only very rare instances of side effects, none of a serious nature," or "patients with this condition have usually had a good recovery in a short time." In case of doubt, it may be wise to preface such remarks with something like this: "nobody can predict the future, but . . .

In cases where there are substantial and serious risks involved in a surgical or medical procedure, it is advisable to have written evidence that no guarantees or assurances of results were given. This is usually accomplished by use of a consent form which includes appropriate language by which it is acknowledged that the physician has not given such guarantees or assurances. This is a good point at which to discuss the whole subject of consent, including consent forms, informed consent, parental consent, and emergency care. Many legal problems arise in this area.

The law and consent

Because of the contractual nature of the physician-patient relationship, it is generally true that a physician cannot lawfully do anything to a patient over the objection of the patient. Even if the patient will die unless he receives treatment, the law ordinarily gives him the right to refuse treatment. There are some exceptions, however. Perhaps the most important relates to infants. Since the law does not consider them capable of giving consent, the right to consent is shifted to a parent or guardian. Also, since they are considered wards of the state, the state may authorize necessary medical treatment if the parents refuse to do so. These principles are perhaps best exemplified by the problems of the Jehovah's Witnesses patients and blood transfusions. As you know, it is contrary to the religious belief of their people to receive a blood transfusion. This problem has had considerable attention from the courts in recent years. Despite some differences of opinion, the rules are quite well established. If the patient is an adult and mentally competent before the law, he has a right to refuse the transfusion, even at the risk of his life. If the patient is a child and the parents refuse permission for a necessary transfusion, the courts may and usually will grant authorization upon request. Some courts have authorized transfusions for objecting adults in unusual circumstances, but this is not common. A physician may lawfully refuse to accept a patient who insists on this or any similar limitation on his practice; or he may, if he wishes, treat the patient subject to the limitation. If he does the latter, however, it is advisable for him to have written proof that the patient insisted on the limitation.

Informed consent

Another exception is the emergency situation where the patient is incapable of giving consent because he is unconscious or drunk or delirious. If possible, it is best to obtain consent from a parent or spouse or relative. Where immediate action is essential to save the life or limb of a person, the physician need not delay to obtain consent. Ordinarily, consent must not only be given, but also be adequate. A patient's consent may not be valid if he does not have a reasonable understanding of the nature and probable consequences of the procedure to which he is consenting.

The physician has an obligation to give the patient such information as will enable him to make a reasonable exercise of his judgment. If a patient has such information, his consent is said to be an "informed consent," which is the best possible protection against a claim of unauthorized treatment. In the case of surgery or other procedures which have high risks, we lawyers advise written proof of informed consent.

This is usually obtained by a consent form which contains an acknowledgment that the nature of the procedure, its probable consequences, its risks, and available alternative procedures, if any have been explained

to the satisfaction of the patient or the person authorized to consent for him. This is important because legal risks are very high for a physician who gives unauthorized treatment. He may be held responsible for any unfortunate result, even if he used his best skill and care. So much for liability to patients. I will now outline some of the other legal problems for the physician. One vital area concerns hospital staff privileges. It is almost impossible today to practice medicine without access to a hospital. If a physician can't get hospital privileges, he may be better off moving to another community. In this regard, there are two kinds of hospitals: governmental and non-governmental. In a hospital which is operated by a county or some other governmental unit, a physician can usually be denied privileges only for good cause. In a non-governmental hospital, however, privileges can usually be granted or denied at will by the governing board. This includes religious, charitable, or community hospitals, in fact, any hospital which is not owned or operated by some governmental unit in this class.

The law and your license

The most valuable possession a physician has, of course, is his license to practice medicine. Each state issues licenses, and generally they are good only in the state in which they are issued. Some states permit physicians who are licensed in other states to practice in their territory under certain limited conditions. Generally, however, a physician is in the same legal position as a layman in a state in which he is not licensed. The basis for loss of a license need not be anything related to medical practice. For example, some physicians have had their licenses revoked for income tax fraud. This, of course, is a criminal offense. As such, it can be cause for loss of license. Fortunately, the number of physicians who face loss or suspension of their licenses is very small. When such a problem does occur, however, the assistance of an attorney is absolutely essential. Only by such assistance can the rights of the physician be adequately protected.

In addition to licensure, there are also some laws which impose limitations and restrictions on medical practice. Practically all states prohibit abortion, except in narrowly prescribed circumstances.* Usually this procedure is permitted only if necessary to save the life of the woman. On the other hand, only a few states (Connecticut, Kansas and Utah) expressly prohibit sterilization for other than therapeutic purposes, while a few others (North Carolina and Virginia) expressly permit voluntary sterilization. In other states there is no definite guidance as to the legality of sterilization for non-therapeutic purposes—birth control for example. Except in those states where it is specifically prohibited, sterilization for birth control purposes is probably not a criminal offense. Under a recent supreme court decision, physicians everywhere can now lawfully give birth control advice.

The prescription and use of narcotics is also subject to restriction. In general, narcotics can be prescribed or administered only where medically justified. They may not be used to maintain an addict. If you prescribe narcotics, be certain that you comply with all of the requirements of state and federal law.

I believe that every state now has a law that silver nitrate drops be administered in the eyes of the newborn. A legislative trend is also developing to require PKU tests for the newborn. Vaccinations are required for school attendance.

Physicians are also required to make reports on certain conditions of patients. In many states, gunshot or knife wounds must be reported. In some, reports must be made of venereal disease, various communicable diseases, suspected abortions, and epilepsy. Most recently, statutes have been enacted requiring physicians to report cases of the "battered child."

The Physician as Medical Witness

Another kind of legal difficulty may arise out of the role of the physician as a medical witness. In the overwhelming majority of lawsuits, medical evidence is required to establish the nature, cause, and prognosis of injury or illness. In every one of these cases,

one or more physicians will have to make a medical report and evaluation. Often they will have to give testimony. If a physician treats a patient for an injury or illness which is involved in litigation, he has a moral obligation, as a part of total patient care, to give whatever assistance is necessary and proper in the litigation.

Physicians may also be called upon to examine a party who was not a patient. They can accept or reject this assignment as they see fit. Many physicians have an unreasoning fear of the role of medical witness. The one thing I want most to accomplish in this part of my discussion is to persuade you not to be afraid. Giving testimony is different from anything you have experienced in medical school but it is not really an ordeal. You should, of course, insist that the attorney who calls you as a witness confer with you in advance, so that you will know what to expect. Then all that is necessary is to answer questions frankly and fairly, without exaggeration or bias. Above all, keep calm and don't lose your temper. The vicious cross-examinations which many physicians fear are largely the fiction of television and motion pictures. You can get trapped if you try to be smart aleck or pretend to more knowledge than you actually have. If you don't know the answer, say so frankly, with explanations if necessary. Don't try to bluff.

One final topic needs mention. That is physicians' contracts. Unfortunately, time will permit only the barest outline. In your professional practice you will frequently have to enter into contracts. It may be an employment contract, a partnership contract, an office-sharing contract, an office lease, or a contract for the sale of your practice. These and other similar documents are important items in your professional career. Don't be afraid to seek legal advice. A physician who tries to draft his own partnership contract, for example, is as practical and economical as an attorney who tries to remove his own gallbladder. Expert legal advice is worth every cent you pay for it.

Many employment contracts or partnership contracts for physicians contain restrictive covenants. If the employee or partner ends the contract, he agrees not to practice within a specific geographic area for a specific period of time. These agreements are enforced if the restrictions are reasonable. I would advise a young physician, however, not to enter into such a contract if he can help it. There does not appear to be any real need for such covenants. They are never used in the legal profession, where competition is certainly just as stiff as in medicine.

I have given you some answers to the question, "how can I stay out of legal trouble?" More important, I hope that I have raised many questions in your minds that I have not been able to answer. Your question, answered or not, my talk will be a success if I have been able to instill in you a fresh and lasting interest in the legal side of medical practice. There is enough to be learned on that subject to keep you interested the rest of your life. •

Esophageal hiatus hernia

Robert M. Taylor, MD,* and Harold L. Feikes, MD, Las Vegas, Nevada**

A brief review, with reference to combined colonic and gastric herniation. An unusual presentation of a problem more common than generally recognized.

HERNIATION OF INTRA-ABDOMINAL viscera through the esophageal hiatus of the diaphragm, most commonly of the sliding or paraesophageal type, also occurs as the result of trauma, or through congenital hiatuses. The symptoms and complications of these types of hernia are different, sometimes confusing to diagnosis, and require different modalities of treatment. Rarely, the paraesophageal type is associated with herniation of the colon as well as the stomach, two examples of which are discussed.

Although many cases of herniation of the stomach as well as of the colon in conjunction with congenital or traumatic diaphragmatic hernias have been observed and reported, the occurrence of herniation of these viscera *through the esophageal hiatus of the diaphragm* has been reported rarely in modern medical literature in America.

Like all medical phenomena which are considered rare, certainly un-reported cases exist, and other such cases may have been overlooked in this review; nonetheless, in the past approximate decade, Creamer,[1] Marchand,[2] Sweet,[3] Boyd,[4] Craighead,[5] and Friedman,[6] in reporting on over 2,000 cases of esophageal diaphragmatic herniation of the stomach make reference to only two instances of this entity occurring in conjunction with herniation of the colon.

Therefore, since the basic entity of esophageal hiatal hernia is a disease the symptoms of which are often confusing and non-specific, and not infrequently simulate or "mask" other serious intra-abdominal afflictions, it seems that two recent and roentgenographically well-demonstrated cases of combined colonic and gastric paraesophageal hiatal hernia are worthy of discussion.

Although the earliest description of diaphragmatic hernia in medical literature were recorded as early as the seventeenth century, no early clarification of type of hiatal herniation was attempted, hence these early cases are assumed to be of the congenital or of the traumatic variety. Then Akerlund, in scientific papers written between 1926 and 1932 introduced the earliest, widely accepted clarification of our understand of diaphragmatic herniation; and, evolving from this earlier work, Hardy[7] developed the most clinically-applicable classification of diaphragmatic hernia, which is quoted as a means of adding perspective to this discussion:

I. Esophageal hiatal hernia (acquired)
   - A. Sliding
   - B. Paraesophageal
   - C. Acquired short esophagus
     1. Peptic esophagitis
     2. Caustic stricture
     3. Scleroderma

II. Congenital diaphragmatic hernia
   - A. Persistent pleuroperitoneal hiatus (Bochdalek)
   - B. Congenital absence of postero-lateral portion of diaphragm
   - C. Parasternal hernia (Morgagni)
   - D. Esophageal hiatal hernia congenital, infantile
   - E. Other-total absence of left diaphragm; congenital eventration of diaphragm; and aorto-esophageal hernia.

III. Traumatic diaphragmatic hernia
   - A. Following penetrating wounds
   - B. Following crushing injuries
   - C. Following operative trauma

IV. Inflammatory: hernia secondary to infections producing necrosis of diaphragm.

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Modern medical authorities agree that hiatal hernias are more predominant in women and that most cases are seen in patients in the fifth and sixth decades of life. The sliding type hiatal hernia most frequently produces symptoms of "heartburn" and chest pain secondary to the peptic esophagitis occurring in approximately 15 per cent of the cases. The esophagitis is a result of the gastro-esophageal reflux of peptic acid secretions. The size of the sliding hiatal hernia is frequently not commensurate with the severity of the symptoms. Frequently very small herniations of the gastric cardia are associated with bleeding, severe peptic esophagitis, scarring, and stenosis which may even lead to the production of the "short esophagus." These phenomena result from the gastro-esophageal reflux which results when the acute angle at the cardio-esophageal junction is lost as a result of the sliding type of esophageal herniation. This reflux is increased by gravitational effects when the patient is recumbent or is bending forward and straining.

In paraesophageal hiatal hernia, the gastro-esophageal junction with its acute angular anatomic relationship remains essentially normal below the diaphragm. However, relaxation of the esophageal hiatus allows the stomach and other viscera to "roll up" along side the esophagus. Therefore, it is more common for the degree of widening of the hiatus to be greater in this type of hernia than in the sliding type of hiatal hernia. As a result of this larger defect, occasionally the entire stomach and other viscera may herniate into the thoracic cavity producing the classical finding known as the "upside down" stomach. This may predispose to serious complications such as gastric volvulus, incarceration, or strangulation.

General agreement exists that the sliding type of hiatal hernia should have surgical correction when the symptoms become intractable or complications develop after sustained medical treatment. However, the surgical repair of the paraesophageal hiatal hernia is indicated as soon as the diagnosis is established because of the greater likelihood of serious complications. Surgical correction of hiatal herniation may be accomplished by either the trans-thoracic or trans-abdominal technic. The most important principle in the surgical repair of the sliding type esophageal hernia is re-establishment of the gastro-esophageal junction with its acute angulation below the diaphragmatic hiatus.

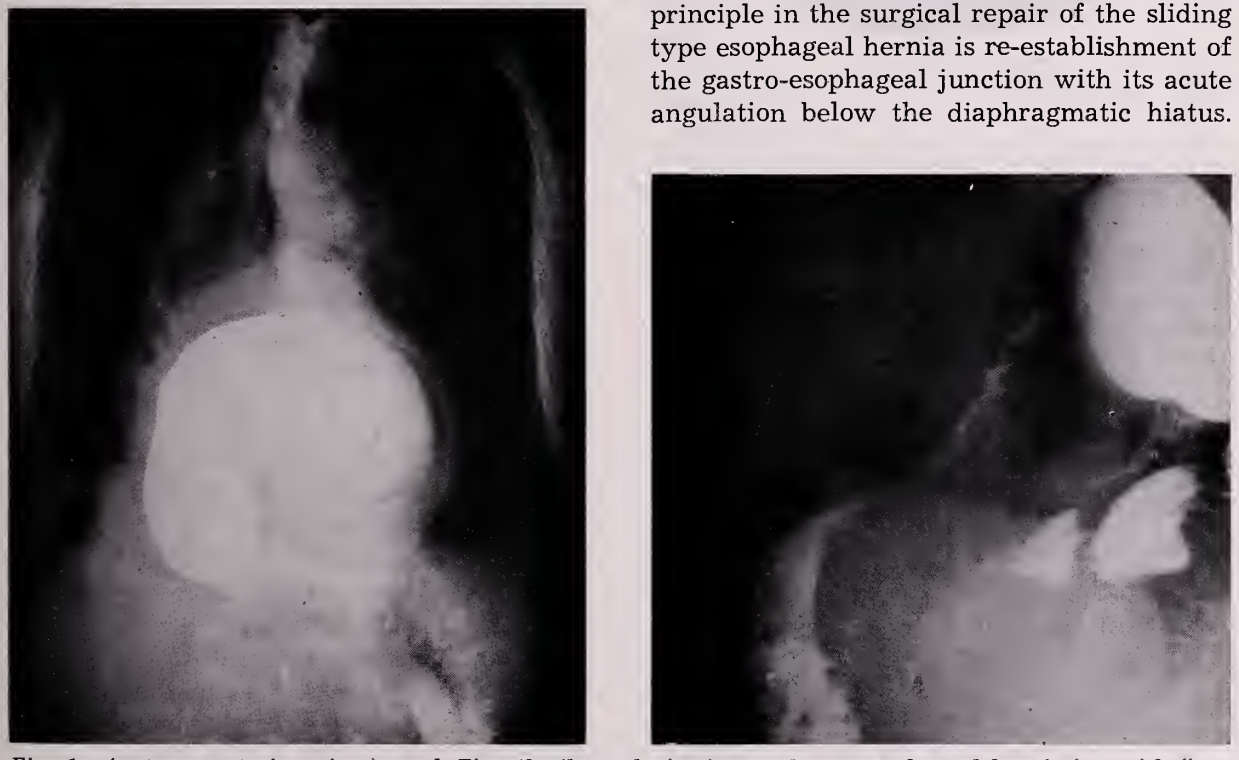

Fig. 1a (antero-posterior view), and Fig. 1b (lateral view) reveal paraesophageal herniation with "upside-down" stomach and widely dilated esophageal hiatus of the diaphragm, with concomitant herniation of a segment of the transverse colon.

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Several satisfactory technics have been developed for this procedure since the classical work by Allison.

REPORT OF CASES

Case 1. An 89-year-old Caucasian female was admitted to Southern Nevada Memorial Hospital because of shortness of breath and a felling of fullness in the upper abdomen. She gave a history of being unable to lie down particularly after eating because of the discomfort and the dyspnea. Examination revealed that the patient also had rather extensive axillary lymphadenopathy secondary to advanced adenocarcinoma of the right breast which had been neglected for approximately two years. Additional diagnostic work-up revealed a large paraesophageal hiatus hernia which contained most of the stomach and a segment of the transverse colon displaced into the central thorax. In view of the patient's advanced age and associated malignancy, surgical correction of the hiatal hernia has been deferred.

Case 2. A 56-year-old, obese, Caucasian female was referred for roentgenographic work-up because of persistent upper abdominal "fullness." Preceding the barium enema the patient stated that she had a "hernia of the diaphragm." During the barium enema examination, evidence of diaphragmatic herniation of the splenic flexure of the colon through the esophageal hiatus of the diaphragm was observed although not conclusively demonstrated. In anticipation of the upper G.I. series which followed, preparations were made for insufflating the colon with air for contrast studies in conjunction with the barium contrast of the stomach. After the paraesophageal herniation of the stomach had been demonstrated, it was evident that the concomitant herniation of the colon had been spontaneously reduced. Therefore, barium was again introduced into the colon by enema and this fluoroscopist had the unique experience of observing the actual phenomenon of the splenic flexure of the colon herniating through the widened esophageal hiatus of the diaphragm. Surgical correction of this combined lesion was recommended.

Discussion

The choice of trans-thoracic or trans-abdominal technics is wisely influenced by a careful preoperative search for concomitant intra-abdominal disease. The most frequently associated diseases are cholecystitis, cholelithiasis, chronic duodenal ulcer, and colonic diverticulitis. The presence of gallbladder disease or duodenal ulceration usually leads the surgeon to elect the abdominal approach for correction of the hiatus hernia. Since hyperchlorhydria is frequently associated with duodenal ulcer and the esophagitis that

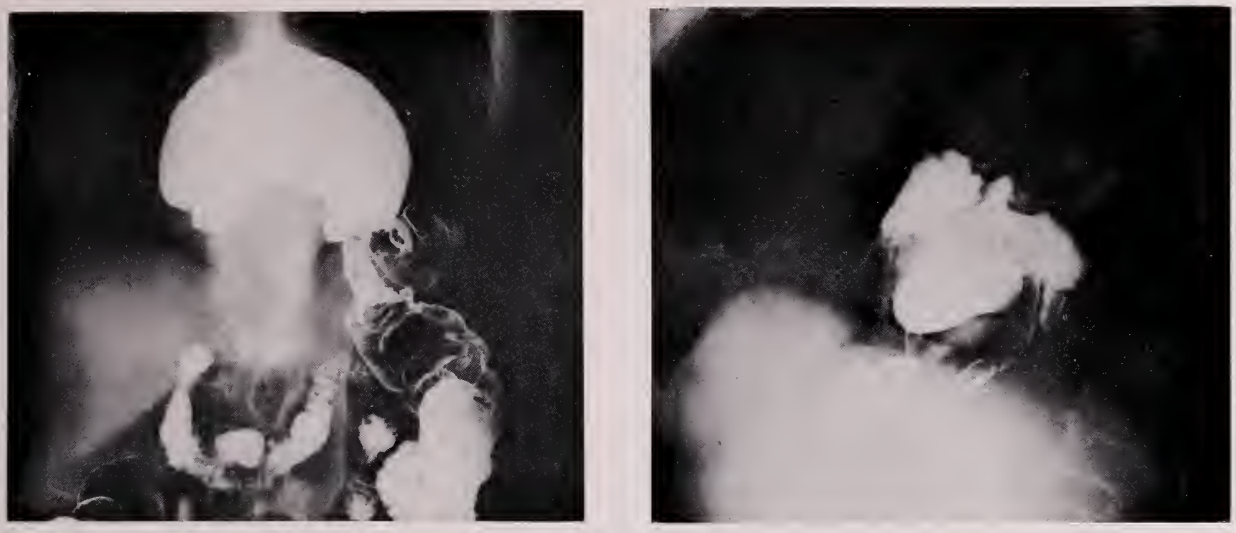

Figure 2a (anterior-posterior view) and 2b (lateral view) reveal paraesophageal hiatus herniation in association with "upside-down" stomach, and concomitant herniation of the splenic flexure of the colon. Note also one large and one small diverticulum of the second portion of the duodenum (not herniated).

occurs in the hiatal herniation, gastric analysis with overnight acid secretions or histamine stimulation gastric analysis should be a part of the preoperative evaluation. These determinations are of importance in the decision as to whether or not the patient should have a vagotomy and pyloroplasty. Progress in technical procedures which improve the accuracy of diagnosis of hiatal herniation, whether of the "problem" sliding type or the complicated paraesophageal type, have been reviewed by Kelly.[8] Principles of radiographic demonstration of lower esophageal contraction rings and gastro-esophageal reflux by means of the water siphonage maneuver during fluoroscopy are clearly set forth. Cine-fluorographic studies with image intensification and intra-luminal manometric pressure studies are of value in establishing a diagnosis in these difficult problems. •

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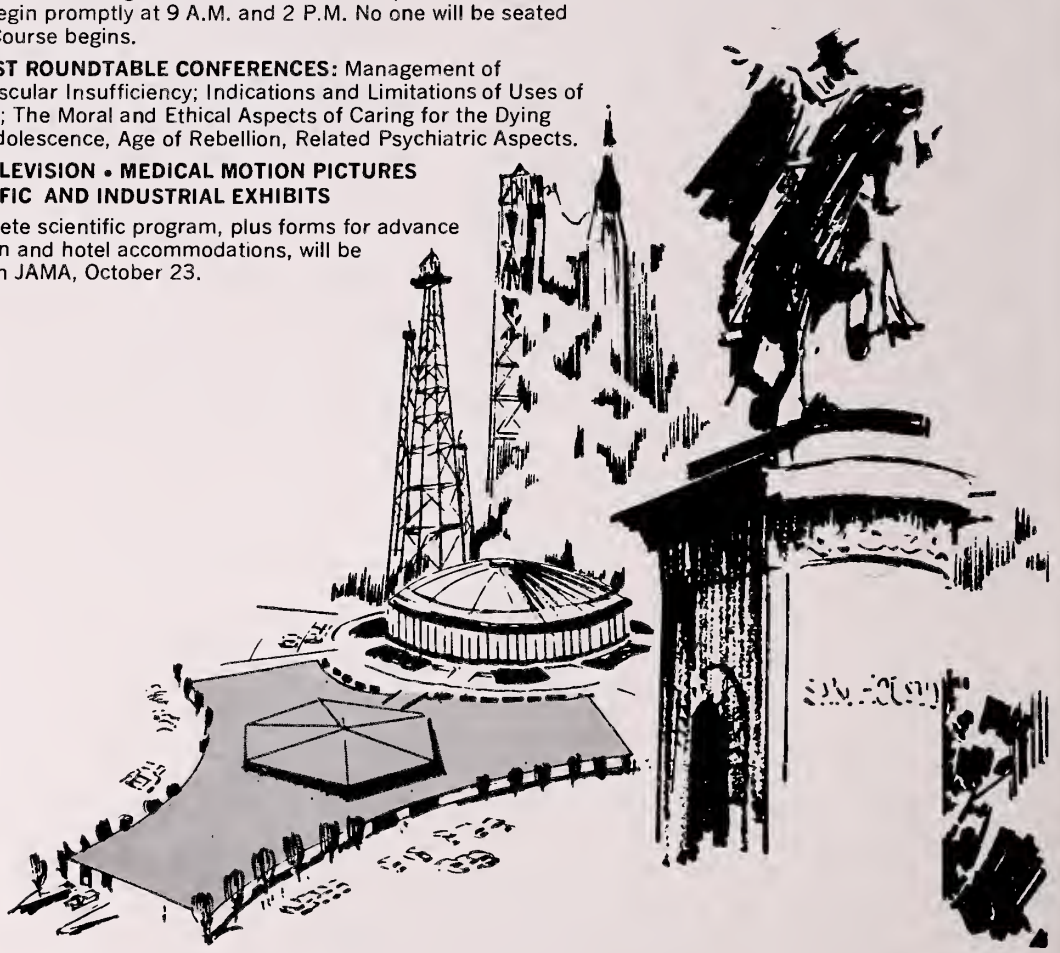

Stevens-Johnson disease presenting with pneumothorax*

Robert V. Broadbent, MD, Reno, Nevada

THE PURPOSE OF THIS PRESENTATION is to report a fatal case of Stevens-Johnson disease which presented with pneumothorax in addition to the classical mucocutaneous bullous eruption. The author's review of the standard texts and current literature failed to unearth any previous report of pneumothorax complicating Stevens-Johnson disease.

Historical

In 1922 Stevens and Johnson reported a "New Eruptive Fever associated with stomatitis and ophthalmia." The serious complex of symptoms bearing their names is now known also as Erythema Multiforme Bullosum. The syndrome of conjunctivitis and mucocutaneous eruption occurs predominantly in males[1, 2] and typically follows several days of idiopathic fever.

The skin lesions are morbilliform and mucular, involve all glabrous surfaces, and may progress to coalescence and extensive exudative vesiculation. Any and all mucous membranes can be involved with any combination of erythema, bullae, and exudation. Bleeding from the gums, rectum and vagina are common accompaniments of the disease. The conjunctival reaction varies from a mild injection to a severe bullous eruption. In the more severe cases, a purulent exudate develops and conjunctival and palpebral synechiae, corneal scarring and permanent impairment of vision ensue.[4]

The more frequent problems presented by the seriously ill patient with Stevens-Johnson disease are those of shock, electrolyte imbalance, protein loss from the bullae, and life-threatening infections. The successful treatment of these complications is predicated on the clinician's high index of suspicion and an early diagnosis.

*From the Washoe Medical Center, Reno, Nevada.

Etiology

The etiology of Stevens-Johnson disease remains unknown. Strom[3] and Copps[5] demonstrated a relationship of the disease to a rise in the cold-agglutinin titre of the Eaton Agent (Mycoplasma Pneumoniae), the infective agent responsible for primary atypical pneumonia. It is also known, however, that cold agglutinins rise in response to infectious mononucleosis and rubella.

Wasserman and Glass[8] report a case of Stevens-Johnson syndrome in a 35-year-old woman following a type A Asian Influenza epidemic. Mediros[7] describes erythema multiforme and erythema nodosum as clinical manifestations of histoplasmosis in an epidemic of that disease in Mason City, Iowa, in 1964. Coccidioidomycosis is alleged to have been similarly associated.

It is popularly theorized, then, that various infective agents may cause the condition in constitutionally susceptible people. The growing list of new reports leaves little doubt now, in addition, that there is a relationship of Stevens-Johnson disease to the administration of anti-convulsants, antibiotics, and of most recent interest, certain long-acting sulfonamides.[1, 2, 4, 6, 9, 10]

Case report

C.L. was a 6-year-old white female who was brought to the author's office because of a fever and rash. A temperature elevation and headache occurred on the previous evening, and the rash appeared on the morning of the initial visit. There had been no cough or gastro-intestinal symptoms. The past medical history was consistent with normal growth and development. Her birth weight was eight pounds, and she walked and talked by the age of one. She had been vaccinated for smallpox, measles and polio, and had received the usual DPT immunization. The only illnesses for which she had been treated were mild upper respiratory diseases.

Examination at her initial visit demonstrated a seemingly normal six-year-old female. She did not appear toxic, nor did the child have any subjective complaints. She did have a temperature of 103.8 rectally, and she presented a faint morbilliform macular eruption of the face and extensor surfaces of the extremities. There was no enanthem but there was a slight superficial conjunctivitis. There was no cough or sign of meningeal irritation. The urinalysis was normal and a blood count showed total white cells number 7200 with 63 per cent polymorphonuclear leukocytes, 10 per cent stab forms and 27 per cent lymphocytes. A tentative diagnosis of an unclassifiable virus exanthematous disease was entertained and the child was allowed to go home on symptomatic therapy.

Four days later the eruption suddenly became bullous, and the child became dyspneic and bled from the mouth. Examination revealed a seriously ill child with a generalized coalescing bullous erythema, in marked respiratory distress, and with cyanosis of the lips and nailbeds.

The exudative eruption involved not only the glabrous skin and conjunctivae, but also the vaginal, rectal and oral mucous membranes. Purulent material exuded from each eye, the lids of which were partially held closed with soft synechiae. The rectal temperature was 101, the blood pressure 100/52 mm of mercury, and the pulse 120 per minute. There was subcutaneous crepitation in the neck, supraclavicular areas, and upper back. The breath sounds were vesicular and there were no rales. The heart tones were normal and there were still no meningeal signs. A diagnosis of Stevens-Johnson disease was made and the child admitted to the Washoe Medical Center and placed on the critically ill list.

The admission laboratory work was as follows: Total white blood count, 7000 with 46 per cent polymorphonuclear cells, 25 per cent stab forms, 22 per cent lymphocytes, and 7 per cent monocytes. The hemoglobin was 13.6 gm, and the hematocrit 43. The plasma CO2 was 16, the chlorides 113, the sodium 137, and the potassium 3.2 milliequivalents per liter respectively. The spinal fluid showed one polymorphonuclear leukocyte and one lymphocyte per cubic mm of fluid. The protein was 11 and the sugar 78 milligrams per cent respectively, and the serology was negative. The colloidal gold curve was 1222200000.

A chest x-ray on admission was compatible with a bilateral thoracic and cervical subcutaneous emphysema and a bilateral pneumothorax. There were gas outlines of all the mediastinal structures, and there were homogenous densities in the lateral aspects of each lung suggesting pneumonitis (Fig. 1).

Fig. 1. Admission roentgenogram of the chest showing bilateral pneumothorax and subcutaneous emphysema.

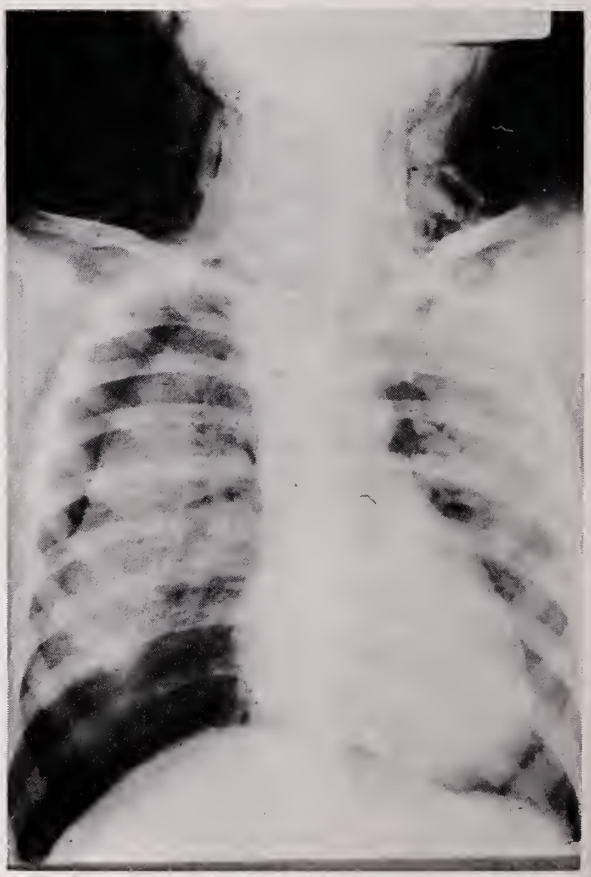

Fig. 2. Roentgenogram of the chest after installation of thoracotomy and tracheostomy tubes.

Since the respiratory distress was the symptom requiring the most urgent attention, the child was placed in an oxygen tent, a thoracotomy tube was installed in the right hemithorax and connected to a water trap. Because these measures failed to produce an amelioration of the dyspnea and cyanosis, a tracheostomy was performed and the x-ray repeated (Fig. 2). In addition, replacement fluids and 100 milligrams of cortisone were given intravenously, but the child expired just three hours following admission.

At postmortem examination, each lung weighed 600 grams and was consolidated and congested.

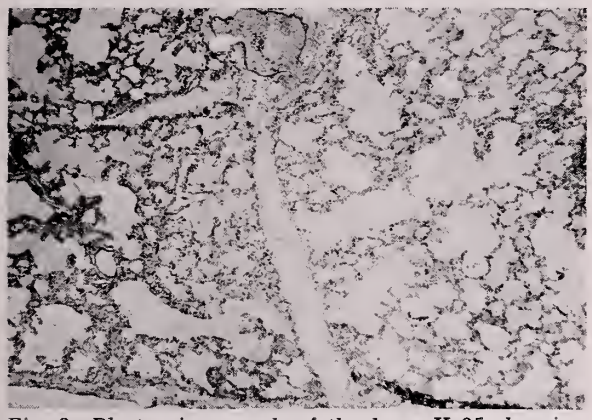

Fig. 3. Photomicrograph of the lung X 25 showing marked interstitial edema, congestion, bronchiolitis, and dilatation of alveoli.

Large 3 to 5 cm bullae involved the visceral pleura on each side, and many of these had ruptured, creating bronchiolar-alveolar-pleural fistulae (Figs. 3 and 4). There was recent pleural effusion with pleural adhesions forming over the surface of each lung. The bullae covering the pleural surfaces were much the same as those involving the glabrous skin and mucous membranes (Fig. 5).

The liver was involved by subcapsular hemorrhage, congestion, cholangitis, and polyploidy of the liver cells (Fig. 6). The other solid organs as well as the gastro-intestinal tract were found to be congested and infiltrated with inflammatory cells.

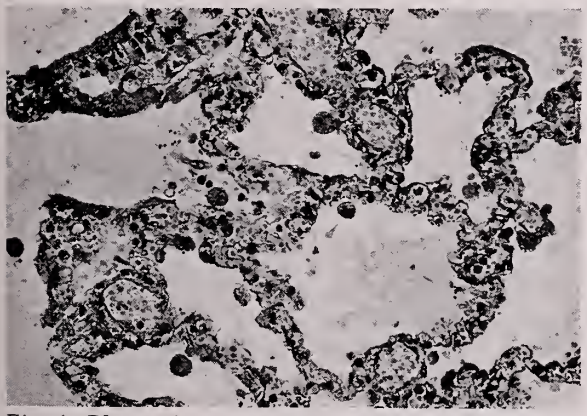

Fig. 4. Photomicrograph of the lung X 300 showing edema, congestion of capillaries, and large, swollen alveoli cells.

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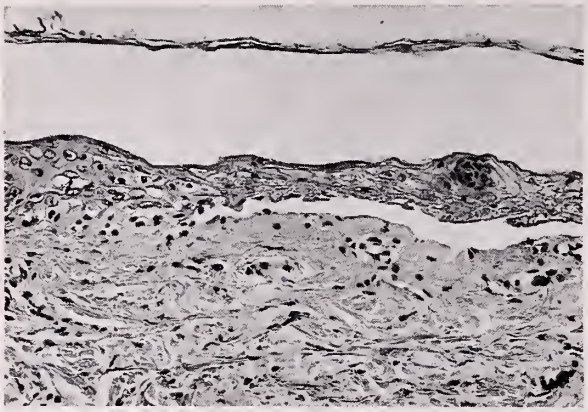

Fig. 5. Photomicrograph of the skin X 75 through a bulla and showing large swollen cells in the epidermis.

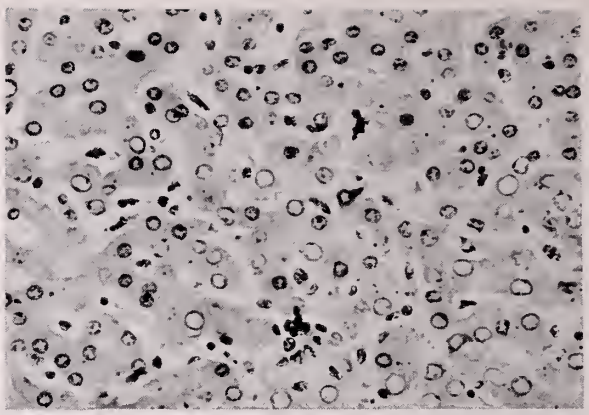

Fig. 6. Photomicrograph of hepatic cells X 300 showing clumped chromatin material in many of the large nuclei.

Discussion

The diagnosis of Stevens-Johnson Disease carries with it the connotation of permanent injurious sequellae as well as a threat to patient survival. While antibiotics are probably valueless in the management of Stevens-Johnson Disease, early institution of corticosteroids might minimize the dangers of bullae formation in the skin, mucous membranes, conjunctivae and possibly pleural surfaces.

Summary

The author reviews the clinical, historical and etiologic features of Stevens-Johnson disease. He then reports a fatal case occurring in a 6-year-old female which presented with pneumothorax in addition to the classical mucocutaneous eruption. The value of various therapeutic modalities is left to prophesy. •

ACKNOWLEDGEMENT

The author is grateful to George T. Smith, M.D., cardiopulmonary pathologist at the Washoe Medical Center and Director of the Environmental Patho-Physiology Laboratory at the University of Nevada. His description of the pathologic material, preparation of the photomicrographs, and personal encouragement have contributed greatly to the preparation of this paper.

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The Livingston placental autolysate

*Effect upon rheumatoid and osteoarthritis**

W. Steele Livingston, DVM, Van Nuys, California and Edgar L. Compton, MD, Las Vegas, Nevada

Historical Background

The possibility that the systemic rheumatic diseases are autoimmune diseases dates back to the earliest work in allergy. Rich and Gregory[1] pointed out that vasculitis was common to serum sickness and rheumatic diseases and that the pathologic picture present in serum sickness was similar to polyarteritis due to sulfonamide hypersensitivity. Klinge[2] observed that fibrinoid change was common to serum sickness and rheumatic diseases. Although considerable evidence has been accumulated during the past fifteen years to demonstrate the immunological apparatus in the various rheumatic diseases, the incrimination of hypersensitivity in the etiology of these diseases is inferential and is based on the drawing of parallelisms.

The observation that pregnant women with one of the systemic rheumatic diseases experience a remission of their arthritic symptoms has stimulated a considerable amount of research in endocrinology and placental tissue extracts. Indeed, the present work was stimulated by the widespread speculation that some product of the placental tissue might possess anti-arthritic properties. During the twenty year period, 1945 to 1965, Livingston[3] developed, by a process of autolysis, a filtrate derived from human placenta. The method by which the autolysate achieves its effectiveness has not been completely established. The following explanation is set forth in order to aid in the understanding of this project.

The explanation is based on the concept that the enzymes of mammalian, bacterial, fungi and yeast cells undergoing autolysis, produce substances which influence the chemical processes of the living organism. Cells within the living organism die and undergo autolysis constantly. Also, there is evidence suggesting that the death and lysis of cells during embryological development influence the orderly development of the embryo. Thus, it seems reasonable to assume that the products of cellular autolysis serve some useful function to the growing and adult organism. This hypothesis suggests that products of cellular autolysis influence the autoimmune mechanism. Studies that have been conducted suggest that some of the products of placental autolysis aid the organism in producing blocking or inhibiting antibodies which inactivate or neutralize the autoimmune diseases.

For the last six years we have been accumulating evidence on human patients with rheumatoid and osteorarthritis. We have demonstrated that the autolysate is completely non-toxic in humans. Over 500,000 injections have been given and more than 1,000 patients have been treated for a period of up to eleven years without any adverse effect.

One hundred nine statistically analyzed double blind studies have been conducted according to a prearranged research protocol and are presented with this report.

Toxicity

No symptoms of toxicity were observed when the lysate was administered to (a) mice intraperitoneally in doses of 2 ml every six hours for seven days, (b) dogs intraveneously in doses of 10 ml three times daily for eighteen months, and (c) cats intraveneously in doses of 3 ml three times daily for nine months.

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Many of the human patients treated have received injections daily for as long as five years and had no symptoms of liver, kidney, haemopoetic or any other organic damage. One experimental cancer patient received 650 ml of lysate in a 12-hour period without any evidence of toxicity. This represents 6,500 doses as administered to arthritic patients.

Immunologic studies conducted on mice, rabbits and dogs have failed to demonstrate an eosinophilia, a Shultz-Dale reaction or a Shwartzman type of response. It has also been impossible to produce hemolysis in mice, rabbits, guinea pigs, dogs and cats have also failed. Efforts to demonstrate the presence of Forssman and Moore cross agglutinating antigens have been negative; however, a compliment fixation titre of 1:60 was demonstrated in the canine. This however could not be repeated consistently. Long term serological studies have failed to demonstrate any alteration in the morphology or numerical distribution of any of the serum cellular elements.

Histo-pathologic studies of the tissues of animals treated with the autolysate for periods of over two years have failed to reveal any pathologic change due to the use of the autolysate.

Dosage and administration

It was observed early in the investigation that dosage was extremely important in treating patients with rheumatic diseases. Excessive amounts of the autolysate produced an exaggeration of the arthritic symptoms; inadequate doses were not effective. Slightly excessive dosage resulted in the patient maintaining a status quo of his symptoms. The dosage requirements varied without apparent reason from one individual to another. A dosage schedule, similar to the one used in allergy therapy, must be followed to arrive at the optimum dose for each patient, and it is imperative to adhere closely to the intracutaneous dosage schedule.

First, the approximate dosage is established at the beginning of therapy. The lysate is prepared as follows:

The lysate is furnished in the lyphilized (dry) form in 3 ml rubber-capped vials. The 3 ml rubber-capped vials with the lyphilized lysate must be used in the following manner:

1. An alcohol sponge is applied to the rubber cap long enough to render the cap aseptic.
2. Sterile distilled water is used to reconstitute the lysate.
3. Using a 1.0 ml tuberculin syringe, add 1.0 ml sterile distilled water to the lyphilized lysate. The dry powder represents 33.0 mg/ml of nitrogen as determined by Nesseler's nitrogen determination. This is hereafter referred to as the stock solution, and stored at or near 10° C.
4. To make a 1:10 dilution use another sterile rubber-capped vial, add 0.9 ml of sterile physiological saline solution to the empty vial. Then add 0.1 ml of the reconstituted lysate (stock solution) to the vial. SHAKE GENTLY. This represents the 1:10 dilution.
5. This same procedure is followed to make 1:100 dilution. Place 0.9 ml of physiological saline solution into an empty sterile 3 ml vial, then take 0.1 ml of solution from the 1:10 dilution bottle and add it to the vial making a 1:100 dilution.
6. To make a 1:1,000 dilution add 0.9 ml of physiological saline solution to an empty sterile vial then add 0.1 ml of the dilution of 1:100 to the vial, and SHAKE GENTLY.
7. To make 1:10,000 dilution add 0.1 of 1:1,000 and 0.9 ml physiological saline solution to the vial.

Make certain you get a wheal after each intradermal injection. If the lysate is given subcutaneously the patient will experience increased pain for 24 to 48 hours.

The patient should be started on a 1:10,000 dilution twice the first week. This dose should be maintained if he shows a very slight improvement. If there is no improvement the dose should be increased to 1:1,000 twice weekly for the next week. The dose should be increased until beneficial effects are observed.

If the patient does not show relief of symptoms after two injections of 0.1 ml of the stock solution, it is helpful to substitute physiologic saline (without the patient's knowledge) for four injections. If the patient then shows improvement, the dosage is too high and should be adjusted downward. If on the other hand, no improvement is observed after the lysate is discontinued for four injections, the dosage should be increased by first giving three weekly injections, then four weekly injections and, if necessary, increase the dosage to one injection every day. If the patient experiences an increase in pain and swelling with any of these dilutions, the strength should be lowered to the previous dilution where there

was no exacerbation noticed. Then, when the pain subsides, the lysate is increased to a dilution between those two dilutions.

The above variations in dosage are given without the patient's knowledge. Most practitioners tend to over-medicate with the lysate. It will require from seven to fourteen days for a patient to recover from the effects of over-dosage after the lysate is discontinued.

The exact dosage for each individual is based on the relief of pain and is determined by the following procedure: 1. If twenty-four hours after the injection, the patient experiences increased pain which subsides before the next injection is due, the dosage is high and should be decreased slightly. (.01 to .05 dilution) 2. If the day after the injection, the patient experiences relief of pain but begins to feel pain by the time the next injection is due, the dosage is too low and should be increased slightly. 3. During the period the exact dose is being established, it is helpful if the patient will keep a daily record of stiffness and soreness.

The patients who benefit from the placental autolysate therapy experience subjective improvement in an average of three weeks; the mean deviation is from one to six weeks. Patients who are receiving one of the cortico-steroids require longer periods of treatment with the autolysate before improvement is observed. After the patient responds to the autolysate, their dose of cortico-steroids, phenlbutazone or indomethicin can be reduced or slowly eliminated.

Clinical research protocol

The objective of the study was to conduct a double-blind clinical evaluation of the Placental Autolysate on rheumatoid arthritis and osteoarthritis. The study was conducted in the local community of each investigator using private patients. These investigators have been working with the autolysate for a period of three years and six years.

The investigation was concluded according to the following plan. A. Each investigator selected patients and conducted a preclinical work-up of each patient consisting of the data described in Fig. 1. Each patient when selected was assigned a number. The

ARTHRITIS THERAPY STUDY

Preparation Employed:

Patient's Name: Hospital and Chart No.:

Age: Sex: Date Beginning of Study: End of Study:

Diagnostic Criteria Applicable (ARA, 1958):

Diagnostic Classification (ARA, 1958):

Anatomical Stage (Steinbrocker):

(Week)	0	2	4	8	10	12	14	16
Functional Class (Steinbrocker) (Beginning, 8 and 16 weeks)								
Therapeutic Criteria (Steinbrocker) (Beginning, 8 and 16 weeks)								
Major Joint Limitation of Motion, Pain								
1. (O-IV) Pain								
(Per Cent) LOM								
2. Pain								
LOM								
3. Pain								
LOM								
4. Pain								
LOM								
5. Pain								
LOM								
Weight								
Average Daily Temp. (Week Preceding)								
Laboratory Data (Beginning, 8 and 16 weeks)								
RBC								
HGB								
HCT								
WBC								
GSR								
S.R.								
Serum Urate								
Latex Test								
L.E. Test								

Patient's Estimate of Per Cent Change in Clinical Status:

Comments and Final Evaluation of Effect of Preparation on Patient Studied:

Fig. 1. Photograph of data sheet for each patient.

name of each patient together with his number was sent to the project director. Only the project director knew the key to randomized numbers. These numbers were placed in a sealed envelope and mailed by registered mail prior to the beginning of the study. Evaluation of each patient was also done in the blind. B. The patients were randomized into two groups. One group received the autolysate and the other received a placebo. C. The autolysate and a placebo consisting of the amino acids and looking exactly like the autolysate were supplied to each investigator. Since the autolysate appears to be non-antigenic, a non-antigenic placebo was chosen. Supplies were sufficient to last four (4) months. Labels consisting of numbers which correspond to each patient randomly selected were supplied in such a manner that the investigator did not know which was the autolysate and which was the placebo. D. Laboratory Reports as described in Table 1 were conducted once a month for three (3) months, at which time the study was concluded and results

TABLE 1

	Drug	*Placebo*
Average Age	52.5 (n=17)	60.2 (n=16)
Sex: Male	5	3
Female	13	13
Steinbrocker Scale		
I	10	7
II	4	7
III	3	2
IV	1	0
Type of Arthritis		
Rheumatoid	16	3
Osteoarthritis	2	3

evaluated. E. Progress reports consisting of case reports and the physicians final evaluation and comments were recorded, as illustrated by Table 2.

Drug requirement was estimated to be 120 days. Duplication copies of all reports were filed by each investigator. The Project Director was W. Steele Livingston, D.V.M.

Resume of double-blind studies:

The patients were selected from two widely divergent populations. Group One was selected from the private practice of T. Reed Maxson, M.D. and consisted of patients presumably encountered by the average general practitioner. Eighty-three point seven per cent of the patients in group one were rheumatoid arthritics. Group Two were selected by Edgar L. Compton, M.D. and are permanent residents of a mineral hot springs and consist of patients with a long history of arthritis. Sixty-eight per cent of the patients in Group Two were osteoarthritics. The patients in this group have tried every known medication available to them with little success and are convinced that nothing will help them. This is evidenced by the low placebo effect in Group Two as opposed to the higher placebo effect observed in Group One. All patients selected have had their disease continuously for at least one year. The patients classified as rheumatoid arthritics were assessed according to the Steinbrocker groupings, and the patients with predominantly degenerative joint disease were classified as osteoarthritics. Patients who had taken antimalarial or gold salts within the last six months were not accepted in the study. Also, patients under 15 years of age and pregnant women, or women likely to become pregnant were excluded from the

TABLE 2

	Drug	*Placebo*
Average Age	61.9 (N=34	64.4 (n=39)
Sex: Male	15	20
Female	21	19
Type of arthritis		
Rheumatoid	11	7
Osteoarthritis	24	29

study. We have attempted to exclude patients who have been taking cortico-steroids, phenlbutazone or indomethicin from the study, but have found this impractical, or impossible. However, we have accepted only those patients who have been taking small fixed doses of these compounds.

Statistical analysis were performed on the two studies submitted in order to determine the efficacy of a placental autolysate in the treatment of arthritis as compared to a placebo. The two studies were analyzed separately and the results are reported as such.

STUDY I

Thirty-four case reports were submitted. Sixteen patients received placebo, while the remaining eighteen received drug. One placebo-treated patient did not complete the 16-week study. This patient was not included in the statistical analysis. The two groups of patients were compared according to some of the pretreatment variables in order to determine whether they were comparable. Table 1 shows the average age, distribution by sex, distribution by Steinbrocker scale, and distribution by type of arthritis for each group. There was no difference between the two groups with respect to these four variables.

The breakdown of the 33 patients who completed the study according to sites of arthritis was as follows:

Site	*Pain*		*LOM*	
	Drug	*Placebo*	*Drug*	*Placebo*
Spine	1		1	
Upper spine	2	1	2	2
Dorsal spine	1	1	1	1
Lower spine		3		3
Back	6	4	6	4
Low back	2		1	
Hip	7	5	7	5
Knees	16	12	16	10
Fingers	10	7	9	7
Hands	5	7	5	7
Wrist	3	1	2	1
Elbow	3	4	2	1
Shoulders	6	4	6	4
Neck	2	7	3	8
Jaw		1		1
Ankles	5	4	4	2
Feet	4	2	4	2
Toes		2		2

At each observation time, the degree of pain and the per cent of LOM were averaged over all sites reported by a patient. For example, if a patient reported pain in three sites, his score was averaged over these three sites for each time

he was evaluated. Similarly, if this same patient reported LOM in only two sites, his average was formed only over these two sites. Clearly in this analysis, equal weight was given to all sites. This mean was a measure of a patient's overall severity.

"T" tests were then performed on this variable at various observation times—weeks 0, 4, 8, 12 and 16—in order to determine whether there was a difference between drug and placebo. It was recognized that the results from week to week were highly correlated, but this method of analysis was used in order to see whether the two treatments were different at a cross-section point in time. It must be remembered that the conclusions at each point in time are not additive. Significance was judged at the 95 per cent level. A "one-tail" test was used since it was assumed that the drug would reduce the score and also because the change in score caused by the drug, if any, would be in one direction.

The results of this analysis indicated that there was no significant difference between the drug and the placebo in either pain or LOM for any of the specified weeks tested. At the end of 16 weeks, the patients treated with drug were in the direction of improvement but the difference was not 'statistically significant.'

A more detailed analysis was done by dividing the sites by location into five groups. The groups were 1. Spine, upper spine, dorsal spine, lower spine, back, low back, hip, 2. Knees, 3. Hands, fingers, wrist, elbow, 4. Shoulders, neck, jaw, 5. Feet, toes, ankles.

Once again, at each observation time, both the degree of pain and the per cent of LOM were averaged for each of the 5 groups of sites mentioned above. For example, patient 1 reported pain and LOM in 5 sites: upper spine, dorsal spine, hip, knees, and fingers. However, 3 of these sites were members of the same group (group 1). Therefore, the scores for pain and LOM in the upper spine, dorsal spine, and hip were averaged in order to obtain an overall value for site group 1. The entries in the other 2 site groups (group 2 and 3) were simply the ratings for the knees and fingers respectively.

For each group of sites, "t" tests were performed on these values at various observation times—weeks 0, 4, 8, 12 and 16—in order to determine whether there was a difference between drug and placebo. Pain and LOM were analyzed separately. Significance was judged at the 95 per cent level using a "one-tail" test.

The results of these analyses indicated there was a significant difference between drug and placebo in LOM in site group 5—feet, toes, and ankles. The patients treated with drug had less LOM than the placebo-treated patients. This significant difference was first observed at week 4 and continued until week 16.

Since the grouping by sites is rather arbitrary, this same analysis was repeated using a different group. This time the sites were divided by similarity. The groups were as follows: 1a. Wrists, ankles, toes, fingers, 2a. Hands, feet, 3a. Knees, elbows, 4a. Shoulder, neck, upper spine, spine, back, 5a. Hip, low spine, low back, dorsal spine.

The results of the analyses of these 5 groups were as follows:

a. At week 16, there was a significant difference between drug and placebo in pain in site group 1a—wrists, ankles, toes, fingers. The drug-treated patients had less pain than the placebo-treated patients.

b. There was a significant difference between drug and placebo in LOM in site groups 1a-wrists, ankles, toes, fingers. The drug-treated patients had less LOM than the placebo-treated patients. This significant difference was first observed at week 4 and continued until week 16.

The overlap by these two groupings was LOM in the ankles and toes.

It was of interest to ascertain whether a trend in reduction of pain and LOM over the treatment period was present in either treatment group and, if so, whether this trend was more pronounced for the drug-treated group. Kendall's S statistic was used to estimate this trend. A positive value of S meant that pain or LOM showed a tendency to increase as the study progressed, while a negative value of S meant that pain or LOM showed a tendency to decrease. A zero indicated no change. This S statistic was generated for each site by a patient for both pain and LOM. These values were then averaged over all sites reported by a patient. Thus, each patient had 2 values; an average trend for pain and an average trend for LOM.

These trends were then analyzed by "t" tests in order to determine: 1 Were they different from zero, i.e., was there a trend? 2. Were the trends different for the drug-treated and placebo-treated groups?

The results were the same in both the analysis of pain and LOM: 1. The average trend in each treatment group was significantly negative, i.e., both groups had a decrease in pain and LOM as the study progressed. 2. There was no significant difference betwen the trends of the 2 treatment groups.

Conclusions

1. The analysis of mean overall severity (degree of pain and per cent of LOM averaged over all sites reported by a patient) for both pain and LOM indicated that there was no significant difference between drug and placebo at any of the observation times.

2. When the sites of arthritis were divided 2 ways—by location and by similarity, the 2 sites which demonstrated a significant difference between drug and placebo both times were the ankles and toes (LOM).

3. Both treatment groups had an average trend which was significantly negative for both pain and LOM, however, the difference between the two groups was not significant.

STUDY II

Seventy-five case reports were submitted. Thirty-nine patients received placebo while the remaining 36 received a placental autolysate. Nine patients—5 on placebo and 4 on drug—did not complete the 12 week study. These 9 patients were not included in the statistical analysis. The 2 groups of patients were compared according to the pretreatment variables in order to determine whether they were comparable. Table 2 shows the average age, distribution by sex, and distribution by type of arthritis for each treatment group.

There was no difference between these 2 groups with respect to these 3 variables.

The breakdown of the 66 patients who completed the study according to sites of arthritis was as follows:

Site	*Pain*		*LOM*	
	Drug	*Placebo*	*Drug*	*Placebo*
Spine	2	2	1	2
Back	4	7	3	5
Low-Back	2		1	
Hip	9	14	7	12
Knees	27	20	16	13
Legs	1			
Hands	17	17	10	14
Wrist	5	1	2	1
Elbows	5	10	4	8
Shoulders	18	17	14	12
Neck	5	5	3	2
Ankles	8	4	5	1
Feet	5	3	4	3

At each observation time, the degree of pain and the per cent of LOM were averaged over all sites reported by a patient exactly as for Group I. "T" tests were then performed on this variable at various observation times—weeks 0, 4, 8, and 12—in order to determine whether there was a difference between drug and placebo also as was done in Group I.

The results of this part of the analysis indicated that, at weeks 10 and 12, there was a significant difference between drug and placebo in both pain and LOM. The drug-treated patients had less pain and less LOM than the placebo-treated patients.

A more detailed analysis was done by dividing the sites by location into 5 groups. The groups were: 1. Spine, back, low back, hip, 2. Knees, legs, 3. Hands, wrist, elbows, 4. Shoulders, neck, 5. Feet, ankles. Once again, at each observation time, both the degree of pain and the per cent of LOM were averaged for each of the 5 groups of sites mentioned previously. For example, patient 10 reported pain in 4 sites: hip, knees, hands, and elbows. However, 2 of these sites were members of the same group (group 3). Therefore, the scores for pain in the hands and elbows were averaged at each point in time in order to obtain an overall value for site group 3. The entries in the other two groups (group 1 and 2) were simply the ratings for the hip and knees respectively.

For each group of sites, "t" tests were performed on these values at the various observation times—weeks 0, 4, 8, and 12— in order to determine whether there was a difference between drug and placebo. Pain and LOM were analyzed separately. Significance was judged at the 95 per cent level using a "one-tail" test.

The results of these analyses were as follows:

1. At week 12, there was a significant difference between drug and placebo in group 3—hands, wrists, elbows. The drug-treated patients had less pain. 2. At week 12, there was a significant difference between drug and placebo in group 4—shoulders, neck. The drug-treated patients had less pain. 3. There was a significant difference between drug and placebo in group 1—spine, back, low-back, hip. This difference was evident at all points in time investigated. The fact that the drug-treated patients had significantly less pain than the placebo-treated patients at week 0 was not taken into account in the analysis of subsequent weeks. This pretreatment difference could conceivably bias the results in favor of the drug.

1. At week 12, there was a significant difference between drug and placebo in group 1—spine, back, low back, hip. The drug-treated patients had less LOM. 2. At weeks 8 and 12, there was a significant difference between drug and placebo in group 4—shoulder and neck. The drug-treated patients had less LOM. 3. At week 12, the drug-treated patients had significantly less LOM than the placebo-treated patients in site 5—ankles and feet.

Since the grouping was rather arbitrary, this same analysis was repeated using a different criteria for grouping. The sites were as follows: 1a. Wrists, ankles, 2a. Hands, feet, 3a. Knees, elbows, legs, 4a. Shoulders, neck, spine, back, 5a. Hip, low back.

The results of the analyses of effect on pain of these 5 groups were as follows:

1. At weeks 8 and 12, the drug-treated patients had significantly less pain than the placebo-treated patients in group 2a—hands and feet. 2. At weeks 8 and 12, the drug-treated patients had significantly less pain than the placebo-treated patients in group 4a—shoulders, neck, spine and back. 3. At week 12, the drug-treated patients had significantly less pain than the placebo-treated patients in group 5a—hip and low back.

The analysis for LOM showed that at weeks 8 and 12, the drug-treated patients had significantly less LOM than the placebo-treated patients in group 4a—shoulders, neck, spine and back. The overlap by these 2 groupings was the spine (pain and LOM), back (pain and LOM), hip (pain), low back (pain), shoulder (pain and LOM), and neck (pain and LOM), and hands (pain).

It was of interest to ascertain whether a trend in reduction of pain or LOM over a treatment period was present in either treatment group, and, if so, whether this trend was more pronounced for the drug-treated group. Kendall's S statistic

was used to estimate this trend by same method used in Group One. Likewise these trends were then analyzed by "t" tests exactly as was done in Group One.

The results were the same in both the analysis of pain and LOM. 1. The average trend in each treatment group was significantly negative, i.e., both groups had a decrease in pain and LOM as the study progressed. 2. There was a significant difference between the trends of the two treatment groups. The drug-treated patients had a more negative trend, i.e., a greater reduction in pain and LOM.

Conclusions

1. The analysis of the mean overall severity (degree of pain and per cent of LOM averaged over all sites reported by a patient) for both pain and LOM indicated that there was a significant difference between the 2 treatments at both week 10 and week 12. The drug-treated patients had less pain and less LOM.

2. When the sites of arthritis were divided 2 ways—by location and by similarity, the sites which demonstrated a significant difference between drug and placebo were the spine, back, low back, hips, hands, shoulders, and neck.

3. Both treatment groups had an average trend which was significantly negative for both pain and LOM. The drug-treated patients had a significantly more negative trend than the placebo-treated patients, i.e., they had a greater reduction in pain and LOM.

Conclusion of studies

A minimum of 83 and a maximum of 150 patients would be required in Study I in order to show the same degree of statistical significance as is shown in Study II. This is assuming that the trend in Study I continues. •

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From weapons to healing

The story of Fort Logan Mental Health Center

Howard A. Winkler, MD*, and Franklin G. Ebaugh, MD, Denver

The historic story and present status of a great institution serving our area. It is of interest to all physicians and to many ancillary workers.

The story of old Fort Logan is, in many ways, a story of the civilization of a land, and a model of the transitions in values that can be realized when civilization takes place. In its present form, Fort Logan testifies that many people have cared a great deal about the quality of life enjoyed by all the people of Colorado, and that they have been willing to implement their caring with work and with dollars.

The Fort Logan Mental Health Center has been operating as a comprehensive treatment facility in the Colorado State Hospital System since July 17, 1961, but there are many individuals, medical as well as non-medical, who still think of it as an old Army post, or a veterans hospital, or a little-used cemetery for the burial of military personnel. This is indeed regrettable, for Fort Logan is developing into one of the most progressive and dynamic mental health treatment centers in the United States.

History

Fort Logan was originally an Army post, established as one of a network of permanent defense installations near potentially large metropolitan centers. It was built in 1887 with a $100,000 federal grant, on land donated by the State of Colorado. General Philip Sheridan, having been a leading advocate of the Denver facility, was commissioned to select the site; but for a fluke of choice, he might also have given it his name. Within eight months the post was activated, but it remained nameless until 1889, when it was christened in honor of another famous general, John Alexander Logan, the originator of the idea of Decoration Day.

Between 1889 and 1961, Fort Logan served many purposes and this variegated history may create some of the confusion about its present function. At this post, troops were trained to quell the Sioux rebellions, to fight the Spanish-American War, to staff Theodore Roosevelt's Rough Riders, and to participate in both world wars. Fort Logan became a convalescent center in 1945. From 1946 to 1951, it was an active unit of the Veterans Administration hospital system. In 1960, the 308 acres of land were deeded back to the State of Colorado, and the development of Fort Logan as a mental health center began.

Toward a modern mental health center

There is little doubt that the stark demands for better psychiatry arising from the mental health casualties of World War II influenced enlightened physicians and laymen in Colorado to seek to develop more effective mental health facilities. At this time the State of Colorado had only one over-crowded, inadequately staffed mental hospital—one which could readily be classified a "snake pit," despite the pleas and efforts of its able superintendent, Dr. F. H. Zimmerman.

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Governor's conferences were being used more and more frequently as a means of enabling interested citizens to express their views to an enlightened head of state. In 1954 a plea for recognition of the State's mental health needs was made at this conference by Dr. Zimmerman.

On the heels of this meeting came a 1955 conference on mental health sponsored by the Western Interstate Commission for Higher Education. As a result, each member state was to present a survey of its mental health needs to its Governor. The Colorado committee which surveyed mental health needs held the unanimous view that a mental health center should be established in Denver. This suggestion created only a few small currents, despite the dedication and zeal of committee members. In 1957, one year later, the same committee, undaunted, repeated its request to the legislature, citing the needs.

The first major step was taken by Governor Steve McNichols, when he asked Dr. James Galvin, who at that time was Clinical Director of Colorado Psychopathic Hospital, to present a schedule for a mental health facility. Governor McNichols continued to pursue the mental health cause, asking for a detailed analysis of the services available for the mentally ill in Colorado. The United States Public Health Service provided the money and manpower for this study. Again, a mental health center was strongly recommended for Denver, one which could include not only the traditional inpatient services, but also a day hospital (which was revolutionary), and outpatient and rehabilitation facilities. In an innovating move, this team also suggested a closer liaison with other health and welfare community organizations, thus laying the groundwork for better things to come.

Finally, in 1959, Governor McNichols created an Ad Hoc Committee on Mental Health, which outlined in concrete terms the essentials for the psychiatric treatment center in Denver, and urged utilization of the already existing but outlying facilities at Fort Logan. After countless hours of hard work, as well as heartbreak, their efforts were rewarded when the United States Government deeded the 308-acre tract of land, plus buildings, to the State of Colorado for the Fort Logan Mental Health Center. On July 17, 1961, Fort Logan welcomed its first patient.

Goals, missions, philosophy

The function of the Fort Logan Mental Health Center is to service the Denver area; this encompasses 1,000,000-plus persons, or half of the State's overall population. As one of its major and fundamental concepts Fort Logan utilizes the idea of the therapeutic community, but with sufficient individual modifications so that it was selected by the joint information service of the American Psychiatric Association as one of the eleven models of comprehensive mental health centers in the United States. The treatment center also received the bronze achievement award of the American Psychiatric Association — the first mental hospital in Colorado to be honored in this way.

Possibly of most importance in Fort Logan philosophy is the recognition that the patient has a responsibility in his treatment, and that it is partly up to him to see that the treatment received is ultimately successful. Heretofore, responsibility for the success of treatment had always been ascribed solely to the physician. This was a radical departure. Although suffering from an emotional illness, the patient is still a human being with civil rights and a claim to respect. The patient at Fort Logan is given increasing doses of responsibility consonant with his abilities and degree of emotional disturbance. He is expected to accept and conform to existing standards of behavior and conduct.

Basically then, and a far cry from traditional methods of dealing with the mentally ill, the Fort Logan philosophy is humane, moral but not moralistic, kindly but not wishy-washy, flexible but not flaccid. Underlying all of its therapeutic modalities is respect for the dignity of the individual.

Services

ADULT PSYCHIATRIC DIVISION: At least fourteen different services are provided by the Fort Logan Mental Health Center. The Adult Psychiatric Division is the largest at Fort Logan, and currently

consists of nine treatment teams, six from Denver County, and one each from Jefferson, Adams, and Arapahoe Counties.

The patient age group is from 18 to 65, and any diagnostic category may be accepted. Among other forms of treatment, this division offers 24-hour care and part-time hospitalization, with the largest single group of patients participating in the part-time plan. Outpatient service is provided for former patients, and may consist only of brief visits with evaluations of medication.

Inasmuch as chronic, long-residence patients are building at the rate of about two per cent of total admissions, annually, it is proposed that additional treatment facilities be made available in the near future for these people. It is anticipated that by 1970 sixty more beds will be required to adequately deal with this segment of the population.

Emergency services of a sort are offered to former or part-time patients in the adult division, and these services are being broadened to provide 'round-the-clock, total emergency care.

GERIATRICS: This division deals with patients 65 years and over who suffer from psychiatric diseases. It has facilities for fifty inpatients, plus a variable number of part-time patients, outpatients, and those in foster or nursing homes.

ALCOHOLISM: At the present time, there are a total of 21 beds, plus expanding day and outpatient facilities for the treatment of alcoholics. Attached to the division, and being fully used, is the half-way house, providing an additional 24 beds. The average length of stay for the alcoholic is two weeks as a full-time patient.

CHILDREN: There are facilities for full treatment of sixty emotionally disturbed inpatient children, plus twenty more children who can be cared for in a day facility.

ADOLESCENCE: One of the most glaring gaps in the program is the lack of any facility for the disturbed teenager, 15 to 18, and it is not through lack of requests on the part of the Fort Logan personnel that this defect exists. There is little doubt that adolescent care is the most neglected area in hospital psychiatry, and yet one of the most important. Planning committees with the representatives from the Department of Institutions, Fort Logan Mental Health Center, and Colorado State Hospital are busy evaluating the needs of this age group, and readying recommendations for presentation to the legislature. Fort Logan is not sitting still waiting for the report of this (Blue Ribbon) committee, but is already requesting an adolescent center to be located on the grounds at Fort Logan with facilities for thirty inpatients.

REHABILITATION: One of the most pervasive and valuable services at Fort Logan is also least understood or appreciated. It is the vocational rehabiltation facility, with arms reaching out into the community in the realms of occupational therapy and planning. Many of the patients are involved in work therapy programs, and receive a small remuneration for their work, plus the opportunity to re-learn the skills of the usefully employed. Contracts are sought from local firms by the vigorous dedicated rehabilitation workers, and the patients work on these. Counseling, testing, and referral for ultimate job placements are all part of the comprehensive vocational rehabilitation program.

HALF-WAY HOUSE: These homes are designed as intermediate stepping-stones to ultimate return to the community. As the patient improves and becomes ready for return to society, the half-way house provides a less traumatic or abrupt transition, and has proved to be a valuable modality.

OTHER SERVICES: All patients suffering from problems associated with drug addiction other than opiates are treated by an appropriate adult psychiatric team. A well equipped medical-surgical unit was opened in 1964 to provide medical and surgical care for patients, and this unit has since been expanded. Because there are no provisions for maximum security in criminal cases, these are referred to Colorado Psychopathic Hospital and Colorado State Hospital at Pueblo. Homes in the community are utilized by Family Care Service for patients who have no homes or families of their own,

or who, for some reason, are unable to return to their own homes. These foster homes try to approximate as closely as possible the situations to be found in an average home. Research is of course an integral part of any progressive institution; Fort Logan is more than capably manned by a well-trained team of research psychologists who produce a prodigious amount of useful information. Among countless others, studies on suicides, the long-stay patients, staff, and patient morale, are currently being developed. After careful screening and evaluation, a large Volunteer Service is utilized for useful and therapeutically oriented tasks, such as driving, classes, reading, and sewing. Finally, a Pastoral Service of ministers of all faiths is available to those who wish additional religious counselling, and the Chaplain-in-Residence acts as a vital liaison between Fort Logan and the community churches.

TEAM CONCEPT: The idea that each treatment unit functions as a team, including both staff and patients, has frequently confused outsiders, who seem to feel that this suggests complete and total equality for all—a sort of chaotic democracy. Obviously this cannot be the case. The psychiatrist is the team leader, and as such, carries responsibility for final decisions. Staff composition of a team at optimum strength is one psychiatrist, one psychologist, two social workers, one head nurse, six duty nurses, and seven psychiatric technicians. Each team decides, within the flexible, overall Fort Logan philosophical orientation, how it wishes to run its treatment program, allowing for considerable variation among teams. This approach has decided advantages when treatment programs are being evaluated and assessed. What is vociferously expressed is that titles do not denote jobs, but the skills of a particular person determine more what his role in the team will be. For example, the skills of a given social worker may be best used in the occupational therapy program or in group therapy, both far removed from traditional social worker roles.

THERAPEUTIC COMMUNITY: This name was first used with any degree of formality by Dr. Maxwell Jones, a British psychiatrist, who worked extensively with wartime psychiatric casualties, and added a novel dimension to traditional forms of psychotherapy. Fort Logan utilizes a modification of the Therapeutic Community, in that therapy is not considered to be a single, 50-minute, daily hour with a private psychiatrist, but rather, a dynamic process continuing for the total waking day of the patient. This is not to suggest that interviews with the psychiatrist are banned or discontinued — only that emphasis is placed on other living experiences and interpersonal relationships as well. This orientation is intended to create a facsimile of the world outside the hospital, so that patients will not be isolated from community life, and can begin re-learning healthier and more effective technics of coping with all types of frustration.

Rarely does any conflict or stress exist for anyone when life situations are tranquil. But is not often that life flows in a placid way. In the therapeutic community, patients, reinforced by staff, can observe and experience all types of situations in a relatively protected, non-punitive, non-threatening environment. This is "practice" for the return to normal living. Although expectations for patients are high, they are generally not unrealistic, so that patients can gradually gain self-confidence and poise under conditions of increasing demand and stress.

Group therapy is, of course, a central pillar of the therapeutic community concept. Its value as an exercise in social living and interaction, and as a means of learning trust is evident from the following statement by Dr. Alan M. Kraft, present director of the Fort Logan Mental Health Center.

"Currently there are many different approaches to group therapy, but most therapists work with groups of six to ten patients meeting once a week for a one to two hour session. Most groups consist of patients of different diagnoses and emotional problems. The content of the psychotherapy meeting usually consists of discussion of the patients' presenting symptoms and problems as well as discussion of the inter-relationships between members of the group. It is commonly found that the kinds of interpersonal problems that patients have with their families or employers are recreated in the group situation between the members of the group. Thus

it is possible for the patients, by examining their styles of relating to the group, to get some understanding and insight into how they relate to people outside of the group.

"There are a number of therapeutic benefits provided by a group therapy approach. First, as with any psychotherapeutic technique, it enables the patient to gain an understanding of the how and why of his problem. Second, many patients as a result of their emotional problems feel isolated and different from other people. In the group situation they are better able to see that other people experience problems similar to theirs, that they are not alone in feeling the way they do. A third benefit is that the patient has available to him not only the therapist's perception of his problem, but also the perceptions of other group members who are often extremely sensitive and skillful in helping each other. The fourth benefit is that the group situation provides a unique learning opportunity for the patient to get a clear picture of how he is seen and regarded by others. He is able to identify those aspects of his behavior that alienate people as well as those aspects that are appealing to others."

COMMUNITY TIES: Fort Logan has many self-sufficiencies, but also tries to maintain continuing ties with the community, for example, in the use of libraries, museums, bowling, golf, swimming, the zoo, cinemas, and the theatre.

In contrast to old state hospital practices, which required that patients be "put away," so they could not be seen, nor could they bother "normal folks," Fort Logan is vigorously promoting more interplay between community and hospital.

1. Patients enter Fort Logan from more than forty different sources, all of which are community-based. In general, most of the patients come from other hospitals (Denver General, Colorado Psychopathic), mental health clinics, private physicians, social agencies, Courts, and welfare agencies.

2. Open meetings for medical and lay personnel are sponsored. These are frequently well attended, for outstanding leaders in the fields of mental health are invited to present topical papers at the Fort Logan auditorium.

3. Medical societies are encouraged to visit Fort Logan so that the community physician, who comprises the first line of defense against psychiatric illness, can be better informed about the program. Fort Logan continues to strive for more cooperation with community agencies; the patients will be the ultimate beneficiaries of this liaison.

Conclusion

During 1965-1966, Fort Logan was visited by almost 6,000 people, or approximately 20 per day. These individuals came from 43 states, as well as 19 foreign countries. What is particularly significant is that professional personnel, including M. D.'s, psychologists, social workers and hospital administrators, came from 43 different universities, 23 different psychiatric clinics, 20 state hospitals, and 18 general hospitals—all desirous of seeing a model, comprehensive mental health center in action.

Statistics, which can frequently be slanted to pinpoint virtually anything the statistician wishes, are nevertheless a sharp and graphic instrument in reporting what Fort Logan is accomplishing.

	Admissions	*Discharges*	*Continuing in Treatment*
1964-65	1,799	1,644	871
1965-66	1,834	1,702	984
1966-67 (projected)	1,989	1,845	1,262
1967-68 (projected	2,046	1,897	1,434

Additional beds are planned, as indicated below.

	Beds Now December, 1966	*Beds Projected June, 1967*	*Beds Projected June, 1968*
Adult Psychiatry	124	140	172
Alcoholism	21	21	21
Child	45	60	60
Geriatrics	50	50	50
Medical Surgical	19	19	38
Emergencies	0	25	25

In five short years Fort Logan has developed into one of the most progressive, dynamic, and enthusiastic programs for the treatment of the emotionally ill in a state hospital system. Although part of the state hospital system, it has had the freedom to move forward in an imaginative way, and has attracted to its staff a vigorous group of professional mental health workers.

Fort Logan has been accepted for residency training in psychiatry, and hopes for effective liaison with the medical faculty in psychiatry at Colorado University Medical Center, in the promotion of healthier community psychiatry. An internship in psychology has been in operation since 1964. Four nursing schools send student nurses to Fort Logan for training, and the School of Social Work of Denver University sends field work students.

Healthy and effective interaction between staff and patients is a significant asset in the Fort Logan operational scheme. Morale is generally at a high but not a "Pollyanna-ish" level. The physical surroundings are incomparably superior, and the campus is blessed with almost 3,000 trees.

Patients can and do shift status rapidly and thoughtfully, from 24-hour care, to day care, to outpatient care, to part-time; the rehabilitative facilities are constantly utilized to capacity. Continuity of care, which was mentioned earlier, is a singularly strong feature of the program. Patients are not dropped when they improve, but are allowed to maintain ties with the parent organization, not in an unhealthy dependency, but in a warm and effective relationship.

There are still needs. Despite Fort Logan's continuing desire for strong community relations, there is still much work to be done, particularly with local physicians and the university medical school. The first requisite is dialogue, to facilitate mutual understanding of goals, needs, and philosophies. An adolescent unit is sorely needed and this is in the planning stage. Of all the age groups requiring facilities, the 15- to 18-year-old group is most neglected, and Fort Logan is attempting to remedy this glaring lacuna.

There is little doubt that Fort Logan is moving in the direction of providing more and better services in the community-oriented treatment of psychiatric illness through the medium of a modern mental health center. Both the original builders and the present staff are to be congratulated on the pioneering spirit in which this fine facility pursues new horizons in the field om mental health. •

ACKNOWLEDGMENT

We wish to pay special tribute to former Governor Steve McNichols, members of the Governor's Ad Hoc Committee on Mental Health, and members of the Colorado State Medical Society Committee for Mental Health for their achievements in the early organizational planning of this important mental health center. The leadership of Governor John A. Love, and of earlier administrators of the hospital, Dr. Fred Lewis, and Dr. James Galvin, is also to be commended: they, and many, many others, helped to make the plans an actuality.

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Fogarty catheters*

Their extended use in vascular surgery

James P. Newby, MD, and W. Gerald Rainer, M.D., Denver

The Fogarty catheter has many uses in vascular surgery.

Since the introduction by Fogarty of a balloon-tipped catheter to remove arterial emboli from the distal aorta, iliac and femoral arteries,[1,2] further application of its use in treating phlegmasia cerulea dolens has been reported.[3]

The Fogarty catheter has been found useful not only as described above, but in our own experience its application has been extended to thrombectomy of long-standing thrombus, thrombectomy of a prosthetic graft and embolectomy of the brachial, radial and ulnar arteries. Illustrative examples are herewith reported.

Fig. 1 Arch injection arteriographic study showing complete obstruction of distal left subclavian artery.

CASE REPORTS

Case 1: A 54-year-old male was admitted to the hospital with pain and coldness of the left arm of two months duration. There were no palpable pulses in the left arm distal to the supraclavicular fossa. Chest roentgenogram revealed bilateral cervical ribs. Arch injection aortography showed complete occlusion of the left subclavian artery at the level of the cervical rib (Fig. 1). Exploration of the subclavian artery revealed constriction of the artery by the anomalous rib, poststenotic aneurysm, and thrombosis of the entire distal arterial system. Initial attempts at passing a Fogarty catheter through the thrombus were unsuccessful; however, after passage of a 12 F catheter through the proximal portion of the clot, the remaining thrombus was removed with ease with a Fogarty embolectomy catheter (Fig. 2). The cervical rib was excised. Aneurysmectomy and graft replacement were performed. Radial and ulnar pulses were excellent postoperatively.

Case 2: A 77-year-old female with atrial fibrillation experienced sudden onset of numbness and coldness of the right arm and hand. Pulses were absent below the mid-portion of the right brachial artery. In spite of stellate ganglion blocks and vasodilators, the hand remained cold and weak and pulses remained absent. Fogarty catheter embolectomy under local anesthesia, via the brachial artery in the antecubital space, yielded thrombotic casts of the entire radial and ulnar systems (Fig. 3). Pulses were excellent following thrombectomy and have remained so.

* From the Department of Thoracic and Cardiovascular Surgery, The Denver Clinic, Denver.
Presented at Southwestern Surgical Congress, Phoenix, Arizona, April, 1967.

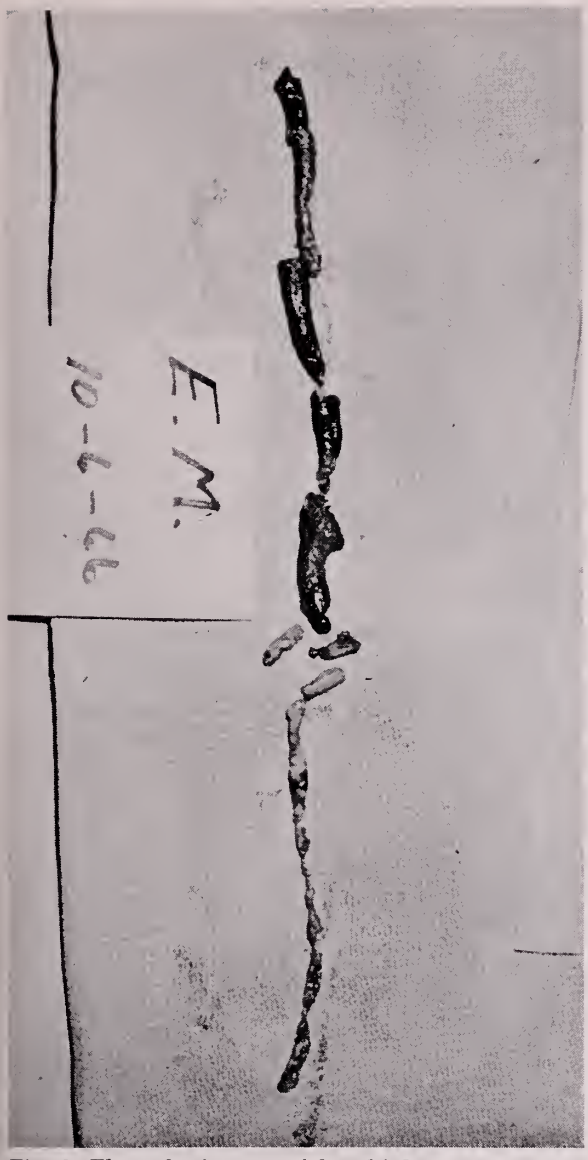

Fig. 2. Thrombotic cast of brachial artery system.

Case 3: A 44-year-old male with severe aorto-iliac occlusive disease underwent aorto-femoral bypass using a prosthetic bifurcation graft. Postoperatively, right leg pulses were of poor quality, and there was intermittent fluctuation of temperature and color of the right lower extremity. Both groin incisions were re-explored and Fogarty catheters passed distally and proximally, passing into the limbs of the graft itself. No clot was found distally in the femoral arteries, but a large amount of clot was removed from the right limb of the prosthetic bifurcation graft. Postoperatively, the patient maintained good peripheral pulses.

Discussion

In removing early thrombi with a Fogarty catheter, the resulting thrombus is usually

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soft and gelatinous. In spite of the organization of a clot that occurs with the passage of time, there is considerable cohesiveness of the obstructing mass—so much so, that upon withdrawal of the catheter a cast of an entire arterial system is often removed with surprising ease.

In addition to the usefulness of the Fogarty catheter in re-establishing patency in obstructed vessels, we feel that it offers some advantage in the gentle cautious dilatation of contracted blood vessels. Once an artery has been deprived of optimal flow by proximal complete occlusion, the wall becomes contracted, yet is capable of being dilated to its original size. We have used the Fogarty catheter to overcome this contracted state following reconstructive surgery on a completely occluded carotid artery of long standing. The balloon catheter can also be used to overcome the spasm in an artery subjected to extensive dissection, such as the internal mammary artery immediately prior to implantation for myocardial revascularization.

These extended applications should not imply that any occlusive process can be overcome by the use of a tube with an inflatable baloon. On the contrary, considerable caution must be exercised in introducing any catheter into the lumen of any atherosclerotic vessel.

Finally, the use of embolectomy with a balloon catheter can convert a viable but ischemic extremity into one of total functional return. This point is emphasized by a more aggressive approach with presently available means to surgical treatment of popliteal and brachial artery emboli which heretofore have been relegated to management by non-surgical means, usually with a resultant ischemic symptomatic extremity.

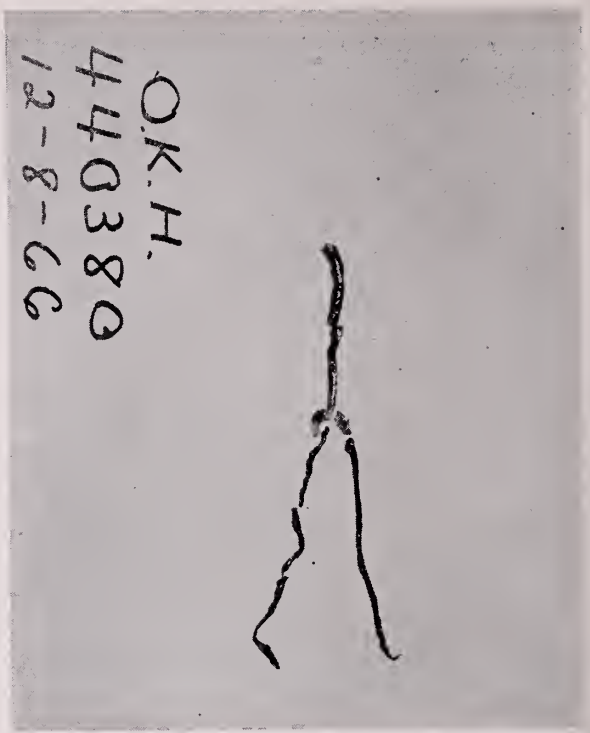

Fig. 3. Thrombotic cast of right brachial, radial and ulnar arteries.

Summary

1. Uses of the Fogarty catheter in instances not previously noted have been presented and discussed.

2. Representative cases are reported. •

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Hypoglycemic stroke precipitated by adrenal insufficiency

Walter A. Huttner, MD, Denver

Oral hypoglycemic agents may cause stroke which must be differentiated from cerebral vascular accident.

Hypoglycemic stroke may be defined as a localized neurological impairment simulating a cerebral vascular accident associated with hypogylcemia and completely alleviated by the administration of glucose. In a recent review of 91 cases of hyperinsulinism secondary to insulin overdosage or insulin-producing tumors, once usually diagnosed as cerebral vascular accidents, such signs as hemiplegia, hemianesthesia, dysphagia, diplopia, nystagmus and dysarthria appeared during hypoglycemia and completely disappeared following adequate glucose therapy.[1]

Despite the prolonged and excessive use of sulfonylureas in the treatment of diabetes over the past twelve years, the incidence of severe hypoglycemic reactions secondary to oral agents, is extremely small.[2] Of 9,146 cases of Parkinsonism treated with sulfonylureas over a period of one to twenty-eight months, only one was found to have a severe hypoglycemic reaction and this was an 86-year-old patient belatedly recognized as a malnourished diabetic.[3] However, localized neurological changes simulating a stroke have also been described secondary to the administration of Tolbutamide as well as other sulfonylureas.

The following case report depicts such an incident, and also involves the presence of adrenal insufficiency as a possible precipating factor.

CASE REPORT

This 57-year-old white male building inspector was admitted to General Rose Hospital on July 15, 1965, in coma. Thirteen days prior to admission he was seen in his physician's office because of diabetes and arthritis. He gave a history of having been treated for rheumatoid arthritis for approximately ten years with Prednisone. The initial dose was approximately 20 mg./day, but maintainance on 5 mg./day effected good control of his symptomatology over the past two years. Diabetes mellitus was discovered three years prior to this visit and he had been controlled on a 1,200 calorie diet and Tolbutamide 0.5 gm. twice a day.

Examination in the office revealed blood pressure 140/74, pulse 80/min. and regular. The patient was a well-developed, well-nourished white male appearing of stated age and in no severe distress. Funduscopic examination revealed grade I arteriosclerotic changes in both fundi; there was no evidence of diabetic retinopathy. Examination of ears, nose and throat was normal; neck was supple; thyroid was not enlarged. The heart was normal in size; no murmurs were heard; aortic second sound was louder than pulmonic. Lungs were clear. Examination of the abdomen revealed no palpable organs or masses. Examination of the extremities revealed arthritic changes in both hands compatible with rheumatoid arthritis with limitation of flexion of both elbows and limitation in abduction of both shoulders. Neurological examination was negative. Laboratory studies showed completely normal blood count, blood sugar of 120 mg. per cent three hours after lunch, and negative urinalysis.

Because of his improved arthritic state he was advised to gradually discontinue steroids over the next seven days, continue the Tolbutamide, and to increase his diet to 1,800 calories.

On the evening of July 15, approximately four hours after eating, he suddenly developed a hemiparesis of his left side with a grand mal seizure. When seen at his home he was unresponsive. He was admitted to the hospital as an emergency. Blood pressure was 130/90; pulse was 78 and

regular. Pupils were equal and reacted to light and accomodation. Heart and lungs were normal. Abdomen was soft without palpable masses or organs. There was a spastic paralysis of his right arm and right leg with a Babinski present on the right. There were good peripheral pulsations. Rectal examination was negative.

Upon admission, blood was drawn for glucose and CO_2 determinations and 1,000 cc. of 5 per cent glucose in water with 7.5 grains of aminophyllin was started intravenously. The blood sugar report was 24 mg. per cent. Within ten minutes after the blood glucose was started at a rate of approximately 50 drops/min., the patient became conscious and all signs of neurologic deficit disappeared. He was concerned as to where he was and why he was in the hospital. The intravenous therapy was then slowed down and was allowed to run throughout the night. It was discontinued at approximately 6:00 a.m. and at approximately 8:00 a.m. on July 16, the patient once again showed signs of impending shock. A blood sugar was drawn and intravenous glucose was started once more. Blood glucose at this time was 28 mg. per cent. The glucose was continued, giving a total of 2,000 cc. of 5 per cent glucose in water over the ensuing 24 hours and by the evening of July 16, 1965, the blood sugar was 45 mg. per cent. During this time he also received and was able to consume an 1,800 calorie diabetic diet. Twelve hours later, on the morning of July 17, his blood glucose was 192 mg. per cent and from that point on, the blood glucose varied between 100 and 170 mg. per cent without parenteral therapy.

Laboratory studies revealed a normal hemoglobin and urinalysis, PBI 4.8 mcg., 17-ketosteroids of 3.3 mg. per cent with urine creatinine of 1.3 gm./24h, 17-hydroxy corticoids of 2.5 mg. per cent/24h, and circulating eosinophil count 165/mm.[3] Skull films were within normal limits. Chest x-ray and electrocardiogram were normal.

His hospital stay was complicated by three febrile episodes on July 17, 20 and 23, the etiology of which was not determined. Electrocardiogram and cultures of blood and urine were negative. Gastrointestinal series showed a possible small inconstant sliding hiatal hernia. His dose of Prednisone was re-instituted at 2.5 mg./day and he was discharged on Tolbutamide 500 m. t.i.d. to control his diabetes.

He did well until September 18, 1965, when, at 1:10 p.m., he developed a severe pain in the left side of his chest. He stated that he had had some intermittent pain in this area for the previous two to three days. One week prior he fell on his right hip sustaining a large contusion and five days before being seen he had swelling behind the medial malleolus of his right ankle. On the evening of the same day he had retrosternal pain associated with shortness of breath. The patient refused hospitalization, but an electrocardiogram in the office was normal and a chest x-ray revealed some elevation of the left diaphragm. The following day the chest pain became increasingly worse, and he accepted hospitalization.

On admission his blood pressure was 160/75, pulse 108/min. and regular, respirations 24/min., temperature 101.4 rectally. There were numerous bilateral basilar rales posteriorly. The chest pain was controlled with 100 mg. Demerol. Three hours after admission the patient experienced severe diaphoresis, his blood pressure dropped to 100/70 and the clinical impression was that of shock. A stat blood sugar was 110 mg. per cent and Levophed was begun intravenously. One hour later the patient became pulseless and despite extracardiac massage, intracardiac adrenaline, I.V. Pronestyl, central nervous system stimulants and bicarbonate, the patient expired.

An autopsy was performed, the essential features of which follow. The left pleural cavity contains 200 cc. of pale yellow fluid. The visceral and parietal pericardium were diffusely adherent and both surfaces were marked by diffuse thin, coarsely granular tan-yellow irregularities. The heart was enlarged to 520 gms. and showed evidence of peri- and epicarditis. The anterior descending branch of the left coronary artery contained a 2 cm. length of diffuse thickening and almost total obliteration of the lumen of that branch. The right coronary showed diffuse hardening and tortuosity with narrowing of the lumen to a pinpoint aperture by the arteriosclerotic process. The brain weighed 1,400 gms. The basilar artery was marked by focal firm pale yellow plaques. The other cerebral vessels were unremarkable.

Microscopically, there was evidence of an acute inflammatory infiltrate in the epicardial surface plus bilateral pulmonary congestion with heart failure cells. There was focal interlobular fibrosis and fatty infiltration of the pancreas. The islets were not specific for diabetes. The cortex of the adrenal glands was thinned and atrophic.

Pathologic diagnosis was (1) pericarditis, acute, diffuse, fibrinous; (2) stenosis of the coronary arteries, diffuse, severe; (3) atrophy of the adrenal cortex bilaterally; (4) generalized arteriosclerosis. No island cell adenoma of the pancreas was present.

Discussion

In the experimental animal, Meyer and Portnoy[5] have been able to produce a localized neurologic defect in the presence of hypoglycemia after partially occluding the middle cerebral artery and subsequently to restore the neurological function to normal by the administration of glucose. The neurological deficit was demonstrated to be due to progressive neuronal paralysis in which neuronal oxygen consumption in the ischemic

area was greatly decreased and was promptly restored to normal by the administration of glucose. During the stage of localized cerebral hypoglycemia, the blood flow in the pial vessels appeared to be unchanged but the arterial-venous oxygen difference was reduced as judged by the appearance of the venules which became orange-red. This change in arterial venous oxygen difference was significantly greater in the ischemic area. The intravenous injection of Trypsan-Blue during hypoglycemia showed no evidence of endothelial damage provided hypotension had not occurred.

Localized hypoglycemic paralysis appeared one-half to one hour after the administration of regular insulin and was delayed for three to four hours after NPH insulin was used. When the signs were maximal, the blood sugar was 10 mg. or less. Provided hypoglycemia was not prolonged, the depression of metabolic rate and functional impairment of the cerebrum remained localized to the ischemic area. Continued hypoglycemia, however, produced a more diffuse effect in the metabolic rate and the non-ischemic hemisphere also became depressed. The administration of glucose produced some recognizable functional recovery within 20 seconds after the IV injection and was usually complete within ten minutes. Prolonged and repeated episodes resulted in permanent functional impairment and histological examination of the brain showed acute necrosis and chromatolysis of nerve cells in the distribution of the occluded vessel.

Animal experiments were also performed in which major cerebral blood vessels were occluded without producing functional deficit but following insulin-induced hypoglycemia reversable impairment of neuronal function resulted. It was concluded that in the presence of a relative area of ischemia, hypoglycemia produces a localized, reversable paralysis of neuronal function.

The duration of the hypoglycemic effect of Tolbutamide is quite variable. After a single intravenous injection of 30 mg.kg. to diabetic subjects, the drug level fell rapidly and the disposal curve was extrapolated to 0 concentration after 18 hours of administration.[6] The half life in these experiments reported

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by Kanauff et al.[7] was three to four hours. Forsham and associates[8] have reported on the chronic hypoglycemic effects of the sulfonylureas and noted upon interruption of the intake of Tolbutamide that a chronic hypoglycemic effect persisted and the fasting blood sugar level remained below the original level for up to four days. This might well explain the prolongation of the hypoglycemia in the case reported.

The presence of adrenal insufficiency, moreover, likely contributed significantly to the hypoglycemia. Tolbutamide itself, according to Guttman, Zipher, Gabriloff and Sopher[9] does not cause any consistent alteration in the level of plasma and urinary 17-hydroxy corticoids and according to the work of Frawley[10] an IV does of 2/5 gm. of sodium Tolbutamide produces no significant effect on the plasma level of hydrocortisone in a normal subject or in a patient with diabetes. Furthermore, Craig and Miller[11] have shown that Tolbutamide action is not altered significantly by adrenal corticosteroid administration.

In this particular case, the steroids were discontinued approximately ten days prior to the onset of hypoglycemia and according to the 17-hydroxy corticoid determination, the steroid levels were still depressed. The presence of adrenal atrophy at autopsy further substantiates this clinical impression.

The noted similarity of this severe type of hypoglycemic reaction to a cerebral vascular accident warrants its inclusion in the differential diagnosis of a "stroke." In addition, the presence of permanent neuronal damage following repeated hypoglycemic episodes in the experimental animal tends to substantiate the clinical finding of cerebral degeneration following repeated episodes of hypoglycemia.

Summary

This is a case of Tolbutamide-induced hypoglycemia in a patient having undergone steroid withdrawal approximately ten days prior to the onset of his symptomatology. The symptoms simulated a localized cerebral vascular accident and were dramatically relieved by the administration of glucose. Autopsy findings approximately two months later revealed adrenal cortical atrophy and the absence of any pancreatic adenoma.

This case emphasizes the potential occurrence of hypoglycemia during Tolbutamide therapy and more significantly the appearance of a localized neurological defect as its presenting picture. Adrenal insufficiency was likely a contributing factor. •

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Internal medicine in Viet Nam

Richard A. Krebs, Capt., MC

We are interested in glimpses inside this unhappy country apart from the blood and thunder of war.

THE PRACTICE OF INTERAL MEDICINE in Viet Nam is for many reasons different from the civilian practice of the same specialty. Not only are the diseases encountered different but also the diagnostic and treatment facilities are quite different and lacking in refinements as found in hospitals in the United States.

The 12th Evacuation Hospital is located in the 25th Infantry Division area near Cu Chi, which is a small South Vietnamese village west of Saigon. The daily hospital census averages 200 patients but the facility can be expanded to 400 beds to meet increased demands. Patients are brought to the hospital for admission directly from the field or are referred by other physicians from smaller treatment facilities—surgical hospitals, clearing companies or aid stations. The average hospital stay is 7.8 days but a patient may remain in an evacuation hospital for 30 days to undergo treatment. Eventually about 83 per cent of our patients are discharged to duty while another 17 per cent are evacuated to field hospitals or out of the country for further evaluation or treatment.

Admissions to the medical service vary in number between 160-200 patients per month. This amounts to 25-30 per cent of the total monthly admissions (the remainder of patients obviously having surgical type illness). The medical service is staffed by two internists.

The majority of the cases seen on internal medicine are infectious diseases and a large number of these are acute benign self-limiting diseases. The breakdown of the conditions seen at 12th Evacuation Hospital over the course of one month is shown in Table 1.

Table 1

INCIDENCE OF MEDICAL DISEASE AS SEEN AT THE 12TH EVACUATION HOSPITAL

Disease	*Per cent incidence*
Fever of unknown origin	12
Medical observation	12
Gastroenteritis	10
Infectious hepatitis	6
Bronchitis	5
Malaria	5
Psychiatric disease	4
Skin disease	4
Infectious mononucleosis	4
Hypertension	3
Hookworm disease	3
Heat prostration	3
Pneumonia	3
Asthma	2
Amebiasis	2
Thrombophlebitis	2
Miscellaneous	16

Several explanatory comments concerning the table are in order. The first (non) diagnostic category of F.U.O. is not the syndrome as it is known in practice in the United States with its implications of possible endocarditis, tuberculosis, lymphoma, or collagen vascular disease, but rather an acute febrile illness lasting 3-5 days. These are dengue-like illnesses which could be more accurately defined with viral isolation and/or serological technics. The second category, that of "medical observation," is a "waste basket" diagnosis usually used when a patient has been admitted for evaluation of atypical abdominal pain, and peptic ulcer disease or intestinal parasites are not found. Some of these cases

may be more appropriately placed under the category of psychiatric illness. The cases of malaria seen at this hospital are about 50 per cent due to P. vivax, easily curable with chloroquin and the other 50 per cent due to P. falciparum of which all have responded well to orally administered quinine and Daraprim. The cases of amebiasis have been mild with no complications but are frequently difficult to diagnose; requiring examination of warm specimens obtained at sigmoidoscopy. These have responded to a triple therapy program of diodoquin, chloroquin and tetracycline. Some of the more interesting but uncommon cases are lumped together in the miscellaneous category of Table 1. These have included, in a one month period, possible insulinoma, gouty arthritis, possible brain tumor, tropical sprue, diabetic acidosis, rheumatoid arthritis, possible poliomyelitis (Vietnamese patient), tuberculosis, myocardial infarction, pulmonary meliodosis, rheumatic heart disease with mitral stenosis and possible sarcoidosis.

The diagnostic support is provided by the X-ray Department which is capable of performing all simple radiographs but incapable of any gastrointestinal contrast or angiographic studies. The laboratory is able to do routine hematology, urinalysis, simple bacteriology and such chemistry tests as bilirubin, BUN, alkaline phosphatase, transaminase and uric acid. More complicated tests and x-rays are obtained in Saigon.

The patients with the diseases tabulated in Table 1 are treated in two quonset buildings, the medical wards. Surrounding these buildings are about 18 other quonset buildings housing surgical wards, operating rooms, emergency ward, pre- and postoperative wards, intensive care ward, administrative buildings, out-patient clinic, Red Cross building and the chapel. Now, if you can imagine helicopters as ambulances, the "quiet zone" of a hospital defiled by the noise of tanks, trucks and artillery, and a great cloud of dust (an integral part of the defoliated military post), you will have an accurate picture of the function and appearance of the 12th Evacuation Hospital in Viet Nam. •

COLORADO

Children's Hospital, Denver, to Honor K.U. Medics at "Kansas Days"

Children's Hospital will present "Kansas Days," a Medical and a Surgical Grand Rounds, on November 10 and 11 in cooperation with the University of Colorado Medical Center and in honor of the Kansas physicians attending the K.U.-C.U. football game at Boulder on November 11.

Thomas M. Holder, M.D., Associate Professor of Surgery and Head of the Section of Pediatric Surgery at the University of Kansas Medical Center, will be a Visiting Professor at the Children's Hospital of Denver on November 9, 10, and 11, 1967.

On game day, special football buses and gourmet box lunches will be available from Children's Hospital. Reservations for the "Kansas Days" and the football specials may be made by writing "Kansas Days," Children's Hospital, 19th Avenue at Downing, Denver, Colorado 80218.

AMA Volunteer Physicians for Vietnam Program

The following named physicians from our six-state area are spending the next two months in South Vietnam, treating Vietnamese civilians. under the AMA Volunteer Physicians for Vietnam program.

They are:

Ben M. Leeper, M.D., Cheyenne, Wyoming.

Jack Curry Redman, M.D., Albuquerque, New Mexico.

Merritt William Stark, M.D., Denver.

AMA Volunteer Physicians for Vietnam is a program for supplying medical care to the civilian population of South Vietnam through the volunteer services of U.S. physicians.

It is administered by the American Medical Association and financed by the United States Agency for International Development.

Volunteer physicians serve a 60-day tour of duty at one of 18 provincial civilian hospitals in South Vietnam. Their services are entirely unpaid except for transportation costs and an expense allowance of $10.00 a day.

A serious shortage of native physicians exists in South Vietnam. Of the approximately 1,000 Vietnamese physicians nearly 900 are in the armed forces, leaving only about 100 to care for the health needs of 16 million people.

Major disease in South Vietnam include malaria, tuberculosis, intestinal parasitism, pneumonia, typhoid fever, trachoma and leprosy. In addition, civilians are frequently wounded by mines, air and artillery bombardment, and small arms fire.

UTAH

Utah Physician with Vietnam Volunteers

Of considerable interest to physicians in our area is the latest information bulletin on Vietnam Volunteers. Dr. Mark B. Jenson, Provo Ophthalmologist, is among the group of seven doctors who are serving a tour of duty commencing July 31, 1967. This service is completely voluntary and sponsored by the American Medical Association.

International Society of Medical Directors Of Chronic Disease Facilities

The first annual meeting of the ISMDCDF will be held at 9:00 a.m. on Thursday, November 30, 1967 in the Warwick Hotel, Houston, Texas—immediately following the A.M.A. clinical meetings. The annual meeting will last for one day.

Bertram B. Moss, M.D., president of the newly formed society and author of **Caring For The Aged**, has extended an invitation to all medical directors in chronic disease facilities and other interested physicians to attend this meeting.

After this first organizational meeting the future meetings of the society will be devoted to scientific presentations concerning the problems of medical directors in chronic disease facilities. The patients in these facilities, it must be noted, are not entirely the "senior citizen" category, but include just about all age groups and represent a wide variety of medical and surgical problems. Considerable research in this area is urgently needed and the ISMDCDF hopes to stimulate interested persons in this field.

Inquiries regarding membership and further details of the November meeting are encouraged and should be directed to: Patricia Morgan Dorr, Executive Director, ISMDCDF, Suite 1003, 360 North Michigan Avenue, Chicago, Illinois 60601.

TAXES

A man making $10,000 a year, who has a wife and two children, now pays 30 cents out of every dollar he earns in taxes of one kind or another . . . If this man is 30 years old, he will pay $101,395 in taxes before he retires—**even if no new taxes are added.**

The American Cancer Society will provide free exhibits for medical, dental or nursing meetings, and displays for hospital staff rooms, medical libraries, etc. Call your local ACS office for further information.

64th Annual Scientific Sessions
Nevada State Medical Association

November 8, 9, 10, 11, 1967
Sahara-Tahoe Hotel
Stateline, Nevada

GREETINGS:

As President of the Nevada State Medical Association, it gives me real pleasure to extend an invitation to every member of the Rocky Mountain Medical Conference to join with us in our 64th Annual Meeting to be held November 8, 9, 10 and 11 at the Sahara-Tahoe Hotel, Stateline, Nevada. Interesting and informative sessions have been organized by our program committee under the leadership of Charles F. Veverka, M.D.

Meeting as we are this year in one of the nation's most renowned and scenic recreational areas with excellent hotel accommodations, members of your family will also enjoy meeting with us. May I suggest you be prepared for cool evenings and brisk, sunny days.

I am looking forward to greeting each of you personally.

Cordially yours,

William M. Tappan, M.D.

Tuesday, November 7

7 p.m.—Executive Committee

Wednesday, November 8

8 o.m.—Orientotion

2 p.m.—House of Delegotes

Thursday, November 9

Presiding: Williom M. Toppon, M.D., President Nevodo Stote Medicol Associotion

UPPER ABDOMINAL PAIN

Surgical Aspects Of Upper Abdominol Poin
BRUCE BRANSON, M.D., Associote Professor of Surgery, Lomo Lindo University School of Medicine

Radiology, Its Role In Diognosis Of Less Common Causes Of Upper Abdominol Pain
HENRY C. GORMAN, M.D., Assistont Professor of Radiology, Lomo Lindo University School of Medicine

The Medicol Aspects Of Upper Abdominol Poin
ROBERT D. MITCHELL, M.D., Associote Professor of Medicine, Lomo Lindo University School of Medicine

Noon — Luncheon (Lodies Invited) — **Treotment Of Viet Nom War Cosuolties**
LT. COL. ALPHONSE GOMEZ, MC, USA, Department of Surgery, Lettermon Generol Hospitol, Son Froncisco

RHEUMATOID ARTHRITIS (Sponsored by Reno Surgicol Society)

The Role Of The Orthopedic Surgeon In The Monagement Of Rheumotoid Arthritis
WILLIAM R. MURRAY, M.D., Deportment of Orthopedics, University of Californio Medicol Center

Clinicol Aspects, Pathology And Medicol Monagement
CARL M. PEARSON, M.D., Professor of Medicine, University of Californio

Vorionts Of Rheumotoid Arthritis
MORRIS ZIFF, M.D., Professor of Internol Medicine, University of Texos Southwestern Medicol School

Friday, November 10

POSTNATAL EMERGENCIES

Radiology Of Surgicol Emergencies In The Newborn Period
JOHN L. GWINN, M.D., Chief, Department af Rodiology, Los Angeles Children's Haspital

Moternol Emergencies In The Immediate Post Portum Period
R. ELGIN ORCUTT, M.D., Associate Clinical Prafessar af Obstetrics and Gynecalagy, University af California

Importont Diagnostic Signs In The Neonotol Period
DONALD E. PICKERING, M.D., Directar, Children's Diognastic Center, Partland, Oregon

Naon — Luncheon — **Public Implications Of The Plowshare Progrom Of The U. S. Atomic Energy Commission**
DELBERT H. BARTH, Ph.D., Southwestern Radiological Heolth Laborotory, Los Vegas, Nevada

THERAPEUTIC ABORTION

Experiences In Colorado Under Theropeutic Abortion Low
WILBUR F. MANLY, M.D., Associate Clinical Professar af Obstetrics and Gynecology, Calorado Medicol School

Experiences In Colifornio Under Therapeutic Abortion Law
R. ELGIN ORCUTT, M.D.

Legislotive Problems In Formulotion Of Theropeutic Abortion Legislation
C. CLIFTON YOUNG, ESQ., Nevada State Senotor, Reno

8:00 p.m. — Annual Banquet (Ladies Invited)
Medicol-Health Quockery
JOSEPH C. SABATIER, JR., M.D., Chairman AMA Cammittee on Quockery

Presentation Of A. H. Robins Award For Community Service

Saturday, November 11

9:00 a.m.—House af Delegates Clasing Sessian

Program Speakers

Bruce Branson, M.D.

Henry C. Gorman, M.D.

John L. Gwinn, M.D.

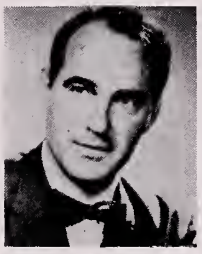
Wilbur F. Manly, M.D.

Robert D. Mitchell, M.D.

Wm. R. Murray, M.D.

R. Elgin Orcutt, M.D.

Carl M. Pearson, M.D.


Donald E. Pickering M.D.

C. Clifton Young, Esq.

Morris Ziff, M.D.

Woman's Auxiliary Program

November 10, 1967

Registratian November 8 and 9 at Sahora-Tahae Hotel

Annuol Business Meeting, Friday, November 10 ot Harvey's Resart Hatel

9:00 a.m.—Cantinental Breakfast

9:30 a.m.—Business Meeting
Mrs. Lawrence Russell, President, Presiding

Noon —Luncheon
Speaker: Mrs. Karl F. Ritter, President Woman's Auxiliary to the American Medicol Assaciotion

2:00 p.m.—Business

Adjaurnment at 4:30 p.m.

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Cancer of the Breast: By John S. Spratt, Jr. Philadelphia, 1967, Saunders. 322 p. Price: $10.75.

Canine Pediatrics; Development, Neonatal and Congenital Diseases: By M. W. Fox. Springfield, Ill., 1966, Thomas. 148 p. Price: $7.50.

Caste and Race: Ciba Foundation Symposium. Boston, 1967, Little, Brown. 348 p. Price: $12.00.

Cowdry's Arteriosclerosis: Edited by Herman T. Blumenthal. 2d ed. Springfield, Ill., 1967, Thomas. 855 p. Price: $48.00.

Cunningham's Manual of Practical Anatomy: Vol. 3, Head and Neck and Brain: Revised by G. J. Romanes. 13th ed. London, 1967, Oxford. 310 p. Price: $9.00.

Current Perspectives in Gastroenterology: Edited by William S. Blakemore. N. Y., 1967, Hoeber. 319 p. Price: $13.00.

Development of the Lung: Ciba Foundation Symposium. Boston, 1967, Little, Brown. 408 p. Price: $13.00.

Emergencies in Dental Practice: By Frank McCarthy. Springfield, Ill., 1967, Saunders. 452 p. Price: $15.00.

Emotional Health of Physicians: By John C. Duffy. Springfield, Ill., 1967, Thomas. 88 p. Price: $5.50.

Endocrinology of the Testis: Ciba Foundation Colloquia. v. 16. Boston, 1967, Little, Brown. 331 p. Price: $12.50.

Gaseous Digestive Conditions: By Joseph H. Pllock. Springfield, Ill., 1967, Thomas. 163 p. Price: $7.00.

Lectures in Medicine: By C. W. Havard. London, 1967, Staples Press. 381 p. Price: $9.00.

Lower Extremity Amputations for Arterial Insufficiency: By Richard Warren. Boston, 1967, Little, Brown. 102 p. Price: $12.50.

Marcello Malpighi and the Evolution of Embryology: By Howard B. Adelmann. Ithaca, N. Y., 1966, Cornell Univ. Press. 5 v. Price: $200.00.

The Pathology of Limb Ischaemia: By Henry Dible. London, 1966, Oliver & Boyd. 100 p. Price: $8.25.

Postoperative Complications in Neurosurgical Practice: By Norman Horwitz. Baltimore, 1967, Williams & Wilkins. 427 p. Price: $17.50.

Respiratory Physiology: By N. Balfour Slonim. St. Louis, 1967, Mosby. 199 p. Price: $8.75.

Speaking and Writing in Medicine: By Clifford F. Hawkins. Springfield, Ill., 1967, Thomas. 159 p. Price: $8.50.

The Surgical Relief of Pain in Arthritic Disease; The Hip and Knee Joints: By Robert A. Herfort. Springfield, Ill., 1967, Thomas. 97 p. Price: $7.50.

Thiamine Deficiency; Biochemical Lesions and Their Significance: Ciba Foundation. Boston, 1967, Little, Brown. 163 p. Gift.

Vascular Complications of Diabetes Mellitus: Edited by Samuel Kimura. St. Louis, 1967, Mosby. 277 p. Price: $19.75.

X-rays and Radium in the Treatment of Diseases of the Skin: By Anthony C. Cipollaro. 5th ed. Philadelphia, 1967, Lea & Febiger. 830 p. Price: $28.50.

Book Reviews:

Handbook of Orthopaedic Surgery: By Alfred R. Shands. 7th ed. St. Louis, 1967, Mosby. 572 p. Price: $12.00.

The seventh edition of the "Handbook of Orthopedic Surgery" by Drs. Shands and Raney with the collaboration of Dr. Brashear must surely be the most succinct and complete text of its type.

In bringing this edition up-to-date, the authors have reduced considerably the subject of poliomyelitis and added brief sections on Perthe's disease, acquired spastic paralysis in adults and traumatic paraplegia and quadriplegia. Other conditions mentioned for the first time in this edition are combined median and ulnar nerve injuries, ochronosis and chondrocalcinosis.

The chapter on tuberculosis of bone joints is nearly twice as large as the section on rheumatoid arthritis. It is this reviewer's opinion that this amount of space allotted to these subjects could be reversed.

The greatest value of this excellent handbook is its seventy-four page, fourteen hundred reference bibliography. It is arranged by chapter and subject making it extremely useful to both the generalist and the specialist.

W. H. KEENER, M.D.

Pulmonary Insufficiency and Respiratory Failure: By Giles F. Filley. Phila., 1967, Lea & Febiger. 162 p. Price: $7.00.

This excellent book on the treatment of complications of the obstructive lung disease syndrome combines much clinical experience and advice with practical usage of the many complicated laboratory measurements available to the practicing physician today. The book is useful for all clinicians but particularly useful for those in the field of Internal Medicine, Thoracic Surgery and the physicians in the field of Pulmonary Disease.

The initial portion reviews the major symptoms and physiologic and structural changes involved in the obstructive lung disease problem. This section emphasizes the structural basis for the disease process and allows the reader to become familiar with the proper use of the combination of clinical examination and laboratory testing to classify the patient with obstructive lung disease into the category of bronchitis, emphysema, asthma or a combination of these diseases. This section sets the stage for the discussion of the complications in the cardiovascular system and helps the reader to understand the problem of pulmonary hypertension and chronic cor pulmonale.

The latter part of the book sets forth guidelines for establishing a respiratory care unit and the many useful aspects of treatment discussed in this section will be effective in a situation where the entire armamentarium of personnel and instruments of a respiratory care unit are not available. The principles discussed in this section applied to an individual patient would vastly improve the care of respiratory insufficiency cases.

This book is fairly brief (162 pages) but is replete with useful information and clear concise

explanations of many of the most complicated aspects of pulmonary physiology and respiratory care. The reader will find that several "tips" through the book produce additional facts and valuable information packed into brief paragraphs and excellent graphic presentations.

DAVID L. KELBLE, M.D.

Friendship and Fratricide: An Analysis of Whittaker Chambers and Alger Hiss, by Meyer A. Zeligs, M.D. New York, 1967, Viking. 475 p. Price: $8.95.

This is a medical book of great general interest in the United States. It is altogether good that a Doctor of Medicine could become intellectually and emotionally so involved in this case that this book should come into being. This is apparently the ninth, and surely the most detailed, book on the Hiss-Chambers case. It is significant that two Englishmen, Alistair Cooke (now an American citizen), and The Earl Jowitt, contributed two of these.

The McCarthy era is a part of American history, along with Valley Forge, Appomattox, and Vietnam; and "the course is yet to run." The hysteria and excesses of this time are implicit in this analysis. The role of Richard Nixon has never been made so clear.

Chambers is dead under equivocal circumstances, and Hiss is out of prison, "hopeful, even optimistic. His faith in his eventual vindication has not diminished." It is to be hoped that President Johnson will issue a pardon to this too-long tormented man. It is the least, not all, but the least that the United States Government can do for this American Dreyfus.

HORACE E. CAMPBELL, M.D.

American Medical Association Clinical Convention November 26-29, 1967

A scientific program especially designed for the physician in practice again will be featured at the AMA's Clinical Convention, to be held in Houston November 26-29.

The four-day meeting will include scientific sessions on 18 major topics, four postgraduate courses, breakfast roundtable conferences, closed-circuit television and medical motion picture programs, and more than 150 scientific exhibits.

Of special interest are the postgraduate courses, expanded to four topics: Fluid and Electrolyte Balance, Oncology, Cardio-vascular Disease, and Obstetrics and Gynecology. Each course will consist of three half-day sessions featuring outstanding teachers.

Scientific and industrial exhibits and all scientific meetings will be in Houston's new Astro Hall, a part of the Astrodome complex.

Topics at the general scientific sessions include: aerospace medicine, antibiotics, arthritis, cancer, cardiovascular medicine, cardiovascular surgery, dermatology, endocrinology, gastroenterology, general surgery, genitourinary treatment, geriatrics, obstetrics and gynecology, opthalmology, otolaryngology, pediatrics, and psychiatry.

The Ninth National Conference on the Medical Aspects of Sports will be Sunday, Nov. 26, at the Hotel America in conjunction with the Clinical Convention. Sponsored by the AMA Committee on the Medical Aspects of Sports, the meeting will feature morning, afternoon, and evening discussions of problems faced by team physicians at all levels of athletic competition.

* * * *

Management of Trauma and Disaster Medical Problems

The application of the concepts of daily emergency medical care to the disaster situation will be analyzed at the First Biennial Symposium on the Management of Trauma and Disaster Medical Problems in Miami Beach, November 10-11, 1967. Sponsored by the American Medical Association's Committee on Disaster Medical Care of the Council on National Security, the two-day symposium will be held at the Carillon Hotel.

Two general sessions, one workshop period, and a panel discussion covering identical subjects—shock and ventilatory dysfunction, fractures, soft tissue and vascular injuries, burns, cardiopulmonary injuries, injuries to the brain and spinal cord, and abdominal injuries—will be offered to the conferees. The workshop period is designed so the individual physician may present case histories from his own practice of complications arising from trauma to a team of experts for discussion.

For additional information write: Committee on Disaster Medical Care, American Medical Association, 535 North Dearborn, Chicago, Illinois 60610.

* * * *

Aspen Conference on The Newborn

Children's Hospital, Denver, will present the Aspen Conference on the Newborn at the Aspen Institute for Humanistic Studies on February 5, 6, and 7, 1968.

Morning seminars and discussions will be led by Jerold F. Lucey, M.D., Professor of Pediatrics, University of Vermont; Thomas K. Oliver, Jr., M.D., Professor of Pediatrics, University of Washington; and Edward J. Quilligan, M.D., Professor and Chairman, Department of Obstetrics, Yale University. Afternoons will be open.

Registration fee is $40.00. Registration will be limited to insure an informal meeting.

For further information write: Aspen Conference on the Newborn, Children's Hospital, 19th at Downing, Denver, Colorado 80218.

* * * *

Cancer Exposition

Doctors, dentists, nurses, veterinarians, and pathologists from throughout the Rocky Mountain area are busy preparing their exhibits and planning the demonstrations they will give at the 1967 Cancer Exposition "Horizons of Hope." The Exposition—believed to be the only one of its kind ever attempted in the United States—will be held at the Denver Coliseum November 27 to December 3, 1967.

It is sponsored by the Colorado Division of the American Cancer Society in cooperation with other health services in the state including the Colorado Nurses' Association, the Colorado and Denver Medical societies, the Colorado Dental Assn., the Denver Dental Society, the Colorado Veterinary Medical Assn., and the Denver Area Veterinary Medical Society.

Over 98 exhibitor booths, each supervised by a qualified medical specialist, will be seen at the Exposition. The American Medical Association will send two exhibits—the "Transparent Woman" and "Life Begins" to the Exposition and the American Cancer Society will send its World's Fair exhibit on Uterine Cancer. Visitors will also see the U. S. Food and Drug Administration "Cancer Quackery" exhibit.

Over 150,000 students and adults from the Rocky Mountain Region are expected to visit the Exposition.

* * * *

Fourth Annual Rocky Mountain Symposium on Kidney Disease

Cosmopolitan Hotel, Denver—November 3, 1967

8:30 a.m. - 5:00 p.m.

The Diagnosis and Management of the Urethral Syndrome in Women / John M. Palmer, M.D.

Renal Tubular Defects Responsible for Clinical Problems / Telfer B. Reynolds, M.D.

An Understanding of the Acidosis in Renal Failure / Louis G. Welt, M.D.

The Pathology of Chronic Pyelonephritis / William S. Hammond, M.D.

Panel Discussion - Diagnosis and Management of Urinary Tract Infections.

Luncheon Meeting - Hemodialysis in the Treatment of Chronic Uremia / Belding H. Scribner, M.D.

Common Problems Encountered with Diuretic Therapy / Telfer B. Reynolds, M.D.

The Diagnosis of Urinary Tract Obstruction / John M. Palmer, M.D.

The Management of the Post-Obstructive Syndrome / Joseph H. Holmes, M.D.

The Significance of Hyponatremia / Louis G. Welt, M.D.

Conservative Management of Chronic Renal Disease / Belding H. Scribner, M.D.

Panel Discussion - The Role of the Family Physician in the Care of the Patient with Chronic Renal Disease.

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

The University of Colorado Board of Regents has appointed a native of Colorado, Dr. Leslie R. Burrows, as dean of the new School of Dentistry being created at the CU Medical Center in Denver. The appointment is effective immediately.

A distinguished dental educator-researcher of national prominence, Dr. Burrows is a 1953 graduate of the University and holds both D.D.S. and Ph.D. degrees. He received his dental degree in 1957 from the University of Kansas City Dental School and earned his Ph.D. in anatomy from the University of Rochester School of Medicine and Dentistry in 1962. He left the position of assistant secretary of the Council on Dental Research of the American Dental Assn. in Chicago to become dental education consultant to the Unversity in July, 1966. Since then he has been engaged in program and curriculum planning for the new school, which will be the only dental school between the Missouri River and the West Coast.

* * * *

The seventh revised edition of the "Handbook of Pediatrics" co-authored by two University of Colorado Medical Center pediatricians has been published by Lange Medical Publications of Los Altos, Calif. The 648-page handbook, first published in 1955, was written by Dr. Henry K. Silver, professor of pediatrics, and Dr. C. Henry Kempe, professor and chairman of the Department of Pediatrics, with Dr. Henry B. Bruyn, associate professor of pediatrics and medicine in the University of California School of Medicine, San Francisco.

A pocket-sized reference volume, the book has proved popular over the past decade with medical students and practicing physicians throughout the world. It is now published in seven languages in addition to English—French, Italian, Spanish, Portugese, Japanese, Arabic and Greek—and a Serbo-Croatian edition is now in preparation.

* * * *

A bequest by a former Longmont woman of securities valued at nearly $96,500 has created a special cancer and heart disease research fund at the University of Colorado Medical Center. Dr. John J. Conger, CU vice president for medical affairs and dean of the School of Medicine, has announced formal establishment of the "Myrtle M. Johnson Research Fund" in memory of the benefactor. Mrs. Johnson died in January, 1966, and her will bequeathed half of her estate to the CU School of Medicine. She was the widow of Loren Johnson, who died in 1954.

Dwight V. Roberts, director of the University

of Colorado Development Foundation, said Mrs. Johnson stipulated in her will that her bequest should be used at the discretion of the Board of Regents for research "into the causes and cures of cancer, arteriosclerosis, and diseases of the heart, or research into the causes and cure of any one or more of said diseases."

By authority of the Regents the Johnson bequest has been placed in the University's endowment fund and the income will be used in carrying out the terms of the bequest.

* * * *

Promotion of seven members of the faculty of the University of Colorado School of Medicine to the rank of assistant professor has been announced by Dr. David W. Talmage, associate dean.

Promoted to assistant professor were Drs. Allen C. Alfrey, Paul Beck, Roger D. Hamstra and Paul D. Klite, all of the Department of Medicine; Dr. Anne D. Morgan, Department of Pediatrics; Dr. Raymond E. Records, Division of Ophthalmology; and Chien San Wang, Department of Biophysics. Advances to the rank of instructor were announced for Dr. Donald Bigelow, Department of Medicine; and Drs. Douglas R. Currin, Jan E. Leestma and Mark E. Williamson, Department of Pathology. Dr. Richard E. Boyle, formerly an assistant clinical professor of medicine on the part-time faculty, has been appointed a full-time assistant professor; Dr. Josiah B. Dodds named an assistant clinical professor of psychiatry on the volunteer faculty; and Dr. Paul R. Hildebrand promoted from faculty associate to assistant professor of general practice in the Department of Medicine.

University of Utah Medical Center

Dr. Carter M. Ballinger announced recently the receipt of two grants from the National Institutes of Health for "Training in Clinical Anesthesiology and Intensive Care."

Chairman of the Division of Anesthesiology, University of Utah College of Medicine, Dr. Ballinger said the first grant will provide stipends for either beginning fellows in anesthesiology or advanced fellows who wish particular training in some aspect of the specialty. Stipends will vary from $6,500 to $12,000 per year plus dependent's allowances.

The second grant for "Research Training in Anesthesiology" will provide funds for a fellow to receive training in one of the basic sciences related to the field.

Physicians interested in further information concerning this training should contact Dr. Carter M. Ballinger, University of Utah College of Medicine.

when bursitis hits a 280-lb. tackle, hit back with Butazolidin alka

Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, [illegible] those responsive to routine measures as well as contraindic[illegible] tients. Obtain a detailed history and a complete physical and l[illegible] examination, including a blood count. The patient should n[illegible] recommended dosage, should be closely supervised and s[illegible] warned to discontinue the drug and report immediately if fe[illegible] throat, or mouth lesions (symptoms of blood dyscrasia); sudde[illegible] gain (water retention); skin reactions; black or tarry stools[illegible] evidence of intestinal hemorrhage occur. Make regular bloo[illegible] Discontinue the drug immediately and institute countermeasu[illegible] white count changes significantly, granulocytes decrease, or [illegible] forms appear. Use greater care in the elderly and in hype[illegible]

Adverse Reactions: The most common are nausea, edema [illegible] rash. Swelling of the ankles or face may be minimized by wi[illegible] dietary salt, reduction in dosage or use of diuretics. In elderly [illegible] and in those with hypertension the drug should be discontin[illegible] the appearance of edema. The drug has been associated with [illegible]

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-for-pay or workaday patients—when they come up with shoulder bursitis and your cal judgment indicates Butazolidin alka—go with it.

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may reactivate a latent peptic ulcer. The patient should be in- to take doses immediately before or after meals or with minimize gastric upset. Mild drug rashes frequently subside uction of dosage. However, rash accompanied by fever or stemic reactions usually requires withholding medication. rash has also been reported. Agranulocytosis, exfoliative s, Stevens-Johnson syndrome, or a generalized allergic re- milar to serum sickness may occur and require permanent al of medication. Stomatitis, salivary gland enlargement, vertigo and languor may occur. Leukemia and leukemoid have been reported. While not definitely attributable to the causal relationship cannot be excluded. Thrombocytopenic and aplastic anemia may occur. Confusional states, agitation, , blurred vision, optic neuritis and transient hearing loss have orted, as have hyperglycemia, hepatitis, jaundice, and several anuria and hematuria. With long-term use, reversible thyroid sia may occur infrequently. Moderate lowering of the red cell e to hemodilution may occur. 6509-V(B)R2

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Capsules

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150 mg. magnesium trisilicate
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Dosage in painful shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

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OBITUARIES

Colorado

Early Friday morning on August 11, 1967, the medical profession of Colorado lost one of its oldest and best-loved members with the death of **George Price Lingenfelter.** Death came suddenly to Dr. Lingenfelter in his own home without warning and apparently without pain, as the result of a simple cardiac arrest. His stout, but tired, old heart finally gave out at the venerable age of 93.

To do justice to the life and memory of any man is a very difficult task indeed, and when that man has been a leader and a vital part of the medical profession for nearly 70 years, the task is especially formidable. Dr. George Lingenfelter was certainly such a man.

He was born on a farm near Liberty, the county seat of Clay County, Missouri, on November 1, 1873, the only child of Evan Price Lingenfelter and Nannie Edmiston Finley Lingenfelter. His father was a native of Kentucky and a Civil War veteran who had campaigned during the Civil War with General Morgan as a member of the Confederate Cavalry Brigade of Kentucky. After the war ended, he left his home in Kentucky to seek a home in the west. He settled in Clay County, Missouri, where he met, wooed and married Nannie Finley.

Nannie Finley died a few days after Dr. Lingenfelter was born, and following her death George was taken into the home of his maternal grandparents, Mr. and Mrs. George Finley, who lived on a nearby farm in Clay County. He continued to make his home with his grandparents all through his childrood, boyhood, and early manhood.

George Finley, Dr. Lingenfelter's grandfather, was a pioneer who had brought his family and his slaves overland by ox-team from North Carolina to homestead a "Timber Claim" in Clay County, Missouri, some 20 years before the outbreak of the Civil War.

With a heritage of pioneering on both sides of his family, it was only natural for Dr. Lingenfelter to become a pioneer himself later on in life and a leader in his profession.

Dr. Lingenfelter received his primary education in a one-room country school house near his grandfather's farm. He received his secondary education in the public high school in the nearby town of Kearney, Missouri. Following his graduation from high school he attended the Missouri Military Academy at Mexico, Missouri, where he graduated later with the rank of 1st Lieutenant. Still later he studied medicine at the University Medical College in Kansas City, Missouri, where he graduated with an M.D. degree in 1897.

After a brief internship in All-Saints Hospital in Kansas City, Missouri, he signed up as a contract surgeon in the Fifth Missouri Volunteers for the duration of the Spanish-American War. When the war ended he established himself as a general practitioner in Excelsior Springs, Missouri. In addition to his general practice in that community, he also served for a short time as the city and county coroner.

In 1902 he suffered a severe attack of asthma and was advised by his physician to move out west to a higher altitude and a drier climate. He followed this advice and moved to Denver that same year, where he began again the practice of medicine as a general practitioner.

Shortly before coming to Denver, however, he married his boyhood sweetheart, Reba Alice McIntire, the daughter of a prominent Excelsior Springs merchant. The trip to Denver served as their honeymoon.

In Denver his asthma rapidly cleared up, his general practice flourished and with Reba's loyal support and her social graces and charm, he was soon established as a substantial member of the community. George and Reba were blessed with only one child, a daughter Kathryn, now Mrs. Morley Thompson of Denver.

In 1910 Dr. Lingenfelter left his medical practice in Denver and went to Boston to specialize in dermatology and syphilology at the Massachusetts General Hospital. After a year of post-graduate work in Boston he went to Europe and spent the year 1911 in additional post-graduate study in the dermatological clinics of London, Berlin, and Paris.

Following his return to Denver early in 1912 Dr. Lingenfelter limited his practice to dermatology and syphilology and shortly thereafter was appointed to the volunteer teaching staff of the University of Colorado Medical School.

He was an unusually gifted teacher of his specialty at the clinical level and was greatly admired, respected, and loved by his associates and students at the medical school over a period of many years. At the end of his teaching career he was retired with the rank of Professor Emeritus of dermatology on Feb. 1, 1946.

During his years of practice in Denver, George Lingenfelter was quite active in medical and civic affairs. He was one of the founders and the first president of the Rocky Mountain Medical Conference and attended all meetings of the conference until he retired from practice on November 1, 1963, his 90th birthday. He was chief medical examiner for the Pullman Company for a period

of five years and chief dermatologist for many years for the Colorado and Southern, the Denver and Rio Grande, and the Union Pacific Railroads.

He was generally accepted and respected as an expert in the diagnosis and treatment of contagious diseases, and because of his proficiency in this field of medicine, he was appointed chief of the Contagious Diseases Department of the Denver City Health Department, a position he filled with great distinction for many years. He also served as the medical director of the Steele Hospital for Contagious Diseases for over twenty years.

In addition to these professional activities he enjoyed an extensive active practice in his specialty and held appointments on the medical staffs of St. Anthony's, St. Joseph's, St. Luke's, Presbyterian, Denver General, and Children's Hospitals.

Dr. Lingenfelter took an active part in the affairs of organized medicine. He was elected president of the Denver Medical Society in 1927 and president of the Colorado Medical Society in 1943. He also served for one year as president of the Rocky Mountain Dermatological Society. He was also an active member of the American Medical Association, the Southern Medical Society, and the Pacific Dermatological Society. On September 21, 1961, the medical profession of Wyoming honored him by electing him an honorary life member of the Wyoming State Medical Society.

He was a member of the Central Presbyterian Church of Denver, the Denver Rotary Club, the Phi Beta Pi Medical Fraternity, and the Denver Country Club. He was a 32nd Degree Scottish Rite Mason, a past Eminent Commander of the Knights Templar Order, and a Noble of the Arabic Mystic Shrine.

Ten days before World War I was declared, Dr. Lingenfelter received a commission as Lt. (j.g.) in the U. S. Navy. During the war he served for a time as medical officer on the battleship Colorado. At the end of the war he continued on in the U. S. Naval Reserve Medical Corps until 1930. He retired then with the rank of Lt. Commander and with a commendation from Captain W. C. Watts, his superior officer. Following the war he was a charter member of the Navy-Marine Legion Post No. 1 in Denver.

An interesting incident in the life of Dr. Lingenfelter resulted from the fact that his maternal grandfather and the father of Frank and Jesse James were neighbors and close friends in Clay County, Missouri. Whe he was eight years of age George attended the funeral of Jesse James. At various times throughout the years that followed he had occasion to publicly challenge various imposters who claimed to be Jesse James, or in some instances, who claimed to be his descendants.

George Lingenfelter loved Denver and was proud of its green lawns, tree-lined streets, and its well-kept parks. He was especially interested in Washington Park. On one of his many trips to Washington, D. C. and George Washington's home at Mt. Vernon, he secured a blueprint of one of the formal gardens at Mt. Vernon. He took this blueprint to two of his close friends, Mayor Ben Stapleton and Congressman William Robb Eaton of Denver, and persuaded them to duplicate the garden in Washington Park. To do this Congressman Eaton had the chief gardener and landscape artist at Mt. Vernon come to Denver and supervise the construction of the new garden. This garden is located on the north edge of the south lake near the center of Washington Park. It is an exact copy of one of the gardens at Mt. Vernon with each flower bed bordered by clipped lodense privet hedges. It is one of the most charming and delightful spots in Denver and one that George Lingenfelter dearly loved.

Dr. Lingenfelter was fond of outdoor activities and enjoyed fishing the cold waters of a mountain stream and hunting in the high country of his adopted state of Colorado. He was a crack shot with a rifle and with a pistol. He installed a pistol target range in the basement of his home at 300 Marion Street, where he spent many happy hours in pistol practice with close friends and companions. He particularly enjoyed marksmanship contests and especially contests with his old friend and hunting companion, the late Dr. Harry Finney.

When Dr. Lingenfelter was a young man in Missouri he mastered the Morse telegraph code and for many years he kept a telegraph key sounder on his desk in the Republic Building. Now and then, between appointments with his patients, he found enjoyment in the practice of his telegraphy.

In youth and young manhood and, indeed, throughout most of his 93 years, George Lingenfelter was a rugged, but handsome man. He had a fair, slightly ruddy complexion, with dark, nearly black hair, heavy dark eyebrows, and smiling, hazel-colored eyes. He was 5' 8½" tall and tipped the scales at 180 lb. He was deep-chested, square-shouldered, and husky with an unusually erect posture, which he always attributed to his training at the Missouri Military Academy.

George Lingenfelter was a soft-spoken, warm hearted, friendly man who loved life and people. He was devoted to his family, his profession and his country. George loved to entertain his friends in his home on Marion Street and at the Denver Country Club and was a friendly and gracious host.

I am sure that his many friends throughout our Rocky Mountain area share my sense of loss now that George is no longer with us. He was a man of simple dignity and integrity, modest and unassuming, gentle and kind, open-handed and open-hearted. He possessed to a very high degree the gift of friendliness. He was, indeed, "a man for all seasons," but above and beyond all this, he was a good companion and a loyal friend.

—Bradford Murphy, M.D.

Dr. Donald Dean Gillespie died suddenly and unexpectedly in his home in Littleton, Colorado, on Monday, August 28, 1967.

Dr. Gillespie was born on March 21, 1931, in Wabash, Indiana. He attended Phoenix College and the Tulane School of Medicine in New Orleans, where he graduated with an M.D. degree in 1956. He interned at the Presbyterian Hospital in Denver, and was a resident in Children's Hospital in Denver and Colorado General Hospital.

Dr. Gillespie was a Diplomate of the American Board of Pediatrics, a member of the American Academy of Pediatrics, and the Rocky Mountain Pediatrics Society. He was also a member of the Colorado Medical Society and the American Medical Association. He served in the U.S.A.F. from 1958-1961. He established himself in the private practice of pediatrics in Littleton in 1963. He was a member of the staff of Colorado General Hospital, Children's Hospital, Porter Memorial Hospital, Swedish Hospital, St. Luke's Hospital, and the Presbyterian Hospital.

He is survived by his widow and two daughters, Diane and Andrea Gillespie of Littleton, his mother, Mrs. Paul Gillespie of Phoenix, Arizona, and his grandmother, Mrs. Charles Gillespie of Wabash, Indiana.

Dr. John Robert Evans died Tuesday morning, August 22, in St. Luke's Hospital following a brief illness. Dr. Evans was born in Racine, Wisconsin, on February 6, 1898. He received his primary education in the Wisconsin public schools. He graduated with a Bachelor of Science Degree from Lawrence College and later attended the University of Chicago Medical School, where he was awarded an M.D. degree in 1928.

Following graduation he served an internship in St. Luke's Hospital in Denver and then entered into private practice of medicine at Sunrise, Wyoming. In 1930 he moved to Denver, where he specialized in obstetrics and gynecology. He retired from practice in 1964, and moved to Parker, Colorado.

Dr. Evans had one of the finest rare book collections in the Denver area. He was a life member of the Associates of the Rare Book Room at the University of Colorado. He was also a past director of the Denver Medical Society's library and continued on as a consultant to the Denver Medical Library until the time of his retirement.

Dr. Evans was a member of the Denver Medical Society, the Colorado Medical Society, and the American Medical Association. He was also a member of the International College of Surgeons.

In addition to his widow, Thelma, Dr. Evans is survived by a son, Dr. John R. Evans, Jr., of Golden, Colorado, two brothers, Dr. Albert E. Evans of Denver, and Lewellyn C. Evans of La-Grange, Illinois; two sisters, Mrs. Eleanor A. Evans, and Mrs. Sarah Owens, both of Racine, Wisconsin, and three grandchildren.

Montana

William Edward Kane, M.D., Butte, Montana, died on June 5, 1967. Dr. Kane was born in Butte on February 25, 1925. He received his M.D. degree from Creighton University School of Medicine in 1953 and upon completion of his internship and residency training engaged in the general practice of medicine in Butte. He was particularly active in medical and community affairs. He was the first president and chief of staff of Silver Bow General Hospital, a founder of the Mary E. Swift Tumor Clinic and Registry and its first chairman, and had served as president and chief of staff of St. James Community Hospital. Dr. Kane also served as Silver Bow County health officer and was very active in the affairs of the Silver Bow County Medical Society.

Harold Schwartz, M.D., Butte, Montana, died in a Missoula hospital on July 7, 1967. Dr. Schwartz was born in Three Rivers, Michigan, on September 28, 1889. He received his M.D. degree from the University of Michigan Medical School in 1911, after which he moved to Butte to engage in the general practice of medicine. Dr. Schwartz was active in community affairs and had served as president of the Silver Bow County chapter of the American Cancer Society.

John Benedict Frisbee, M.D., died in Napa, California, on July 19, 1967. Dr. Frisbee was born December 2, 1876, in Ellington, New York. He received his M.D. degree from the University of Buffalo School of Medicine in 1901. Shortly thereafter he moved to Butte to engage in the practice of medicine. Dr. Frisbee was a member of the staff of St. James Hospital for more than fifty years. He was the founder of the first x-ray laboratory at the hospital and served as its first technician.

Hazel Freed, M.D., Lewistown, Montana, died on August 13, 1967. Dr. Freed was born November 29, 1885, in Wilmont, Ohio. She received her M.D. degree from the University of Colorado School of Medicine in 1917 and immediately thereafter began the practice of medicine in Montana. She established a practice in Grass Range in 1917 and moved to Stanford in 1937. Upon her retirement in 1957, she moved to Lewistown. Dr. Freed served as health officer of Judith Basin County for many years and was very active in the affairs of that community.

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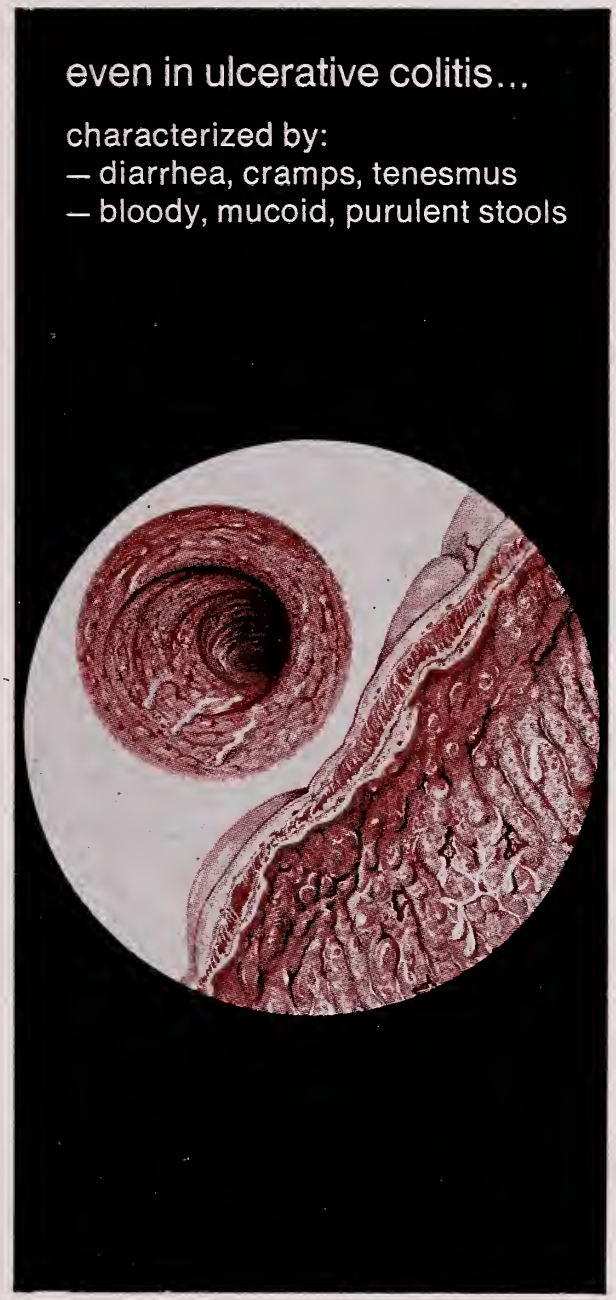

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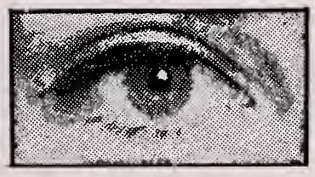

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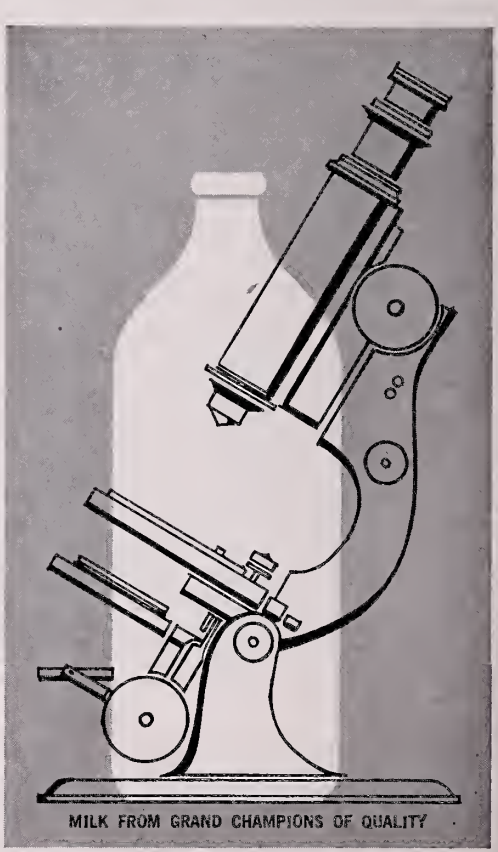

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Rocky Mountain Medical Journal

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NOVEMBER 1967

VOLUME 64 NUMBER 11

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COVER PICTURE

INDIAN HUNTERS' RETURN

The painting on our front cover, which is printed with permission of the Montana Historical Society, is entitled, "Indian Hunters' Return." It was painted in 1900 by Charles M. Russell. This important painting depicts the pleasure and gratitude when freshly-killed buffalo comes into the winter camp of the Plains Indians. It is not only very authentic, but it has an emotional and aesthetic impact that readily illustrates Russell's love for his red brothers.

Charles Marion Russell was born in St. Louis, Missouri, on March 19, 1864, a member of a prosperous family whose manufacturing business promised a secure financial future. But from early boyhood, young Charles showed a streak of nonconformity, preferring to mold figures of clay, draw pictures, and wander down to the waterfront of St. Louis to dream and talk with the adventurers who had been to the western frontier.

By the time he was 13 years old, Russell had his dream firmly in mind. In spite of family efforts to dissuade him, he finally ventured to Montana by railroad and stage in the company of Pike Miller, a family friend.

It was in March, 1880, just short of his 16th birthday, that the boy and his older companion rolled into Helena, the roaring mining town on Last Chance Gulch. The scene that met his eyes only solidified Russell's wish to stay in this territory which still had a total of less than 40,000 people.

Almost at once, young Russell cast his lot with Jake Hoover, a hunter and trapper, wise in the ways of the West. In the next two years, Russell learned much about the country. Two years later, by now known as "Kid" Russell, the youngster hired out as a night wrangler at Billings and joined an outfit that trailed 1,000 cattle into the Judith Basin. Then came jobs with other cow outfits. In the winter of 1886-87 he painted his famous postcard-size "Waiting for a Chinook," informing Stadler and Kaufman of Helena that the tragic hard winter which marked the decline of open range ranching had wiped out their herd of 5,000 Bar-R cattle.

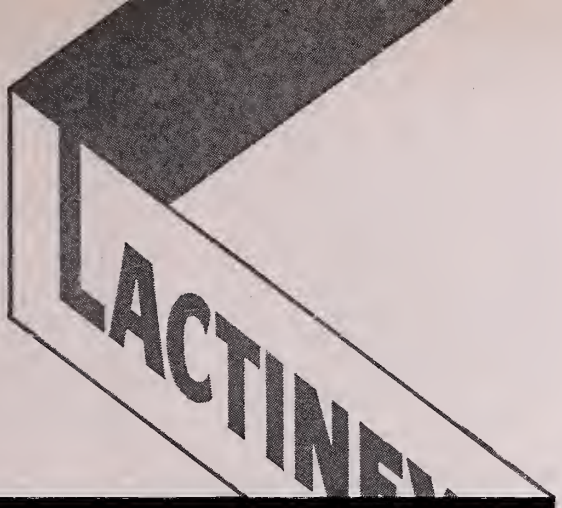
In 1888, the young wrangler (he never claimed to be a top hand) rode into Canada to live with the Blood Indians. His nimble fingers were more and more active depicting what he saw and experience with both brush and clay. When he returned to the Judith Basin in 1889 he found the range filling with homesteaders, towns and the inevitable confinements of growth and sophistication. Vainly looking for open range, Russell moved to the Milk River area just south of Canada. He came to Great Falls in 1892, to live thereafter as an artist, although it was tough going for several years.

It was in 1896 that Russell married Nancy Cooper, who became his business manager and who is credited with encouraging him as a serious artist and demanding and getting good prices ("dead man's prices," Russell said) for his work. The artist built his log studio in Great Falls in 1903 and soon his services as an illustrator of magazine articles and books were in demand, and his other work was creating in the art world.

In 1926, Russell's health began to fail and he went to Rochester, Minn., for a goiter operation. His recovery did not come as expected and he died in Great Falls on October 24, 1926. People from all walks of life, including his beloved old cowboy and Indian friends, wept on the streets of Great Falls as his saddle horse and funeral cortege, unmechanized, passed down the street.

Many of Russell's major works are in the permanent collection of the Historical Society of Montana, in Helena.

For information on how you may obtain a quality reproduction of the "Indian Hunters' Return," see the editorial on page 38.



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References:

(1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., *38*:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

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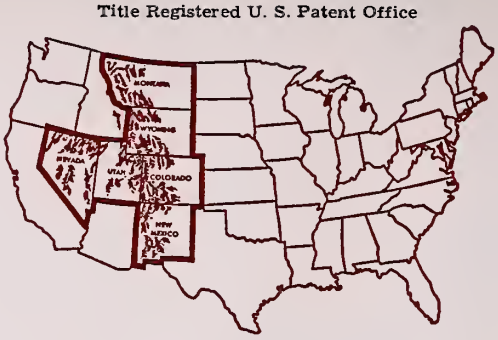

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September 13, 1967

To the Editor:

At the request of colleagues on the Public Health Council and others, I am sending you a copy of a description of an Antabuse Administration Program which has the finest endorsement possible, for after a ten year period it has been determined that IT WORKS.

It will be noted that the method of administration, the dosage and the lack of consideration of relative contraindications is not in keeping with current recommendations of the PDR, but we are working with Ayerst Laboratories in an attempt to revise the "stuffer" to delete the multiplicity of "contraindications" which have not proved to be valid in our long experience with the dosages indicated.

Currently our local Municipal Court is extending this program, in which patients are evaluated by their physician and a prescription for Antabuse is written. The drug is administered under the stern scrutiny of the officers of the Municipal Court for those alcoholic patients who have come into a probationary status with the Court as a result of the social difficulties related to their alcoholism.

As a result of informal and personal communications, numerous private physicians and clinics have instituted programs based upon our experience, and their success has been directly related to the vigor with which they have insisted upon the patient's adherence to the program.

It is hoped that the publication of this brief informal description may serve as a basis for a general extension of similar programs and perhaps refinements, which may serve as an effective method of control of this very serious public health malady, chronic alcoholism.

The text of the program description, originally written in 1963, follows in the Colorado Section of this issue of the R.M.M.J.

R. L. Condé, M.D.
Associate Psychiatrist,
Emory John Brady Hospital,
Colorado Springs, Colorado.

To the Editor:

This is to thank you for the printing and the understanding and generous comment on the article published in the Denver Post, April 1, 1967.

The response to the article has been almost unbelievable, with reprints in the *National Observer,* the *Suburban Express and Reporter* of Natick, Mass., and, most valued of all, in your fine journal. I am told it was printed again in a Chicago paper. There are letters from six states, and many, many telephone calls. Dr. Charles Smith sent me the editorial from the June issue. Mrs. Horace Campbell gave me the name of the printing company, and the printing company gave me the address of your office. They told me to ask for Pauline, who sent me a copy of the June issue.

From your comment on the article; from the carefully written article on emasculation by Dr. Horace Campbell in the June issue; from the accepted use of the contraceptive pill, and other devices; from the relaxed abortion laws, I begin to have hope for our civilization. Whether, in the years to come, it is white or black, or any shades in between need not make too much difference, but whether we have a healthy, normal, mental and physical civilization does matter. The family of man will continue, no doubt, but our place in it, I sometimes question. It brings me to a sense of the amazing and terrible responsibility of the medical profession.

We trust you—oh, how we trust you—with our own lives and, in consequence, are obliged to trust you with the lives of future generations. Sometimes it seems that too much emphasis has been put on science, on the scientific effort to prolong life. One visit to the small child department at Ridge Home will justify that statement. A visit to any nursing home, other than the swank-moneyed homes, covers another angle. It has been my good fortune to know only *good doctors,* wonderful men whose place in our lives has a much firmer foundation than our prayers for supernatural help.

But where does this put the good doctor? It seems to me it should be the duty of the honest men of the profession to *see us out* decently and with self-respect. Because we do not accept this premise, that we deny that privilege to our faithful friend, is the reason for my plea for *one more pill* for a safe, sane, sure release. Not many would use it, but the number who have said, "When you find the pill, do remember me," would warrant its production. It does seem that you should know and trust the ones of us who are old enough and still in our right minds, to know when the day is over. At 81 I am still interested enough to be anxious to know the outcome of the next election, and to see the aspen flame again.

There is so much more to be said, and 81 grows late.

Sincerely,
Elsie Miller Garman

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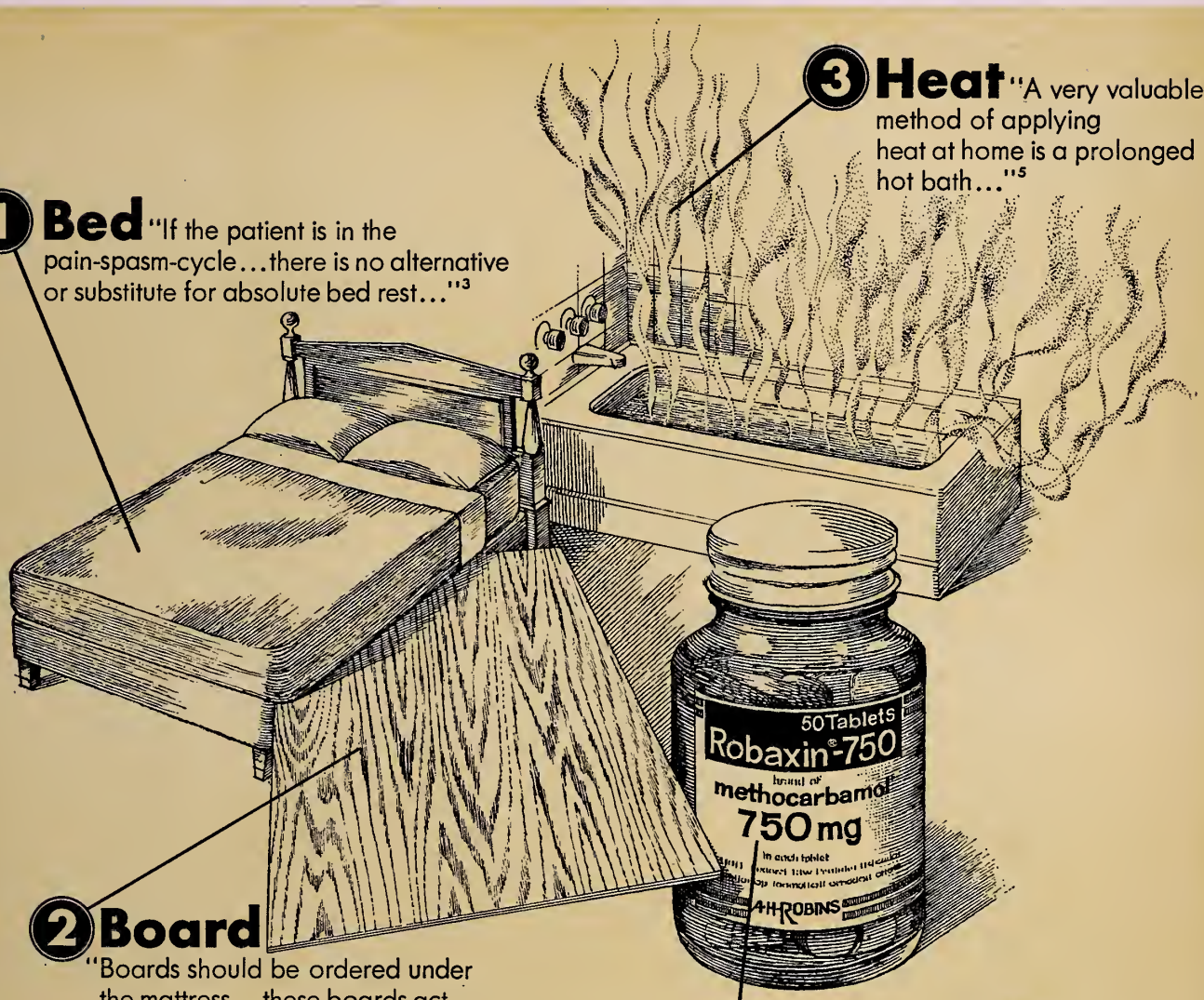

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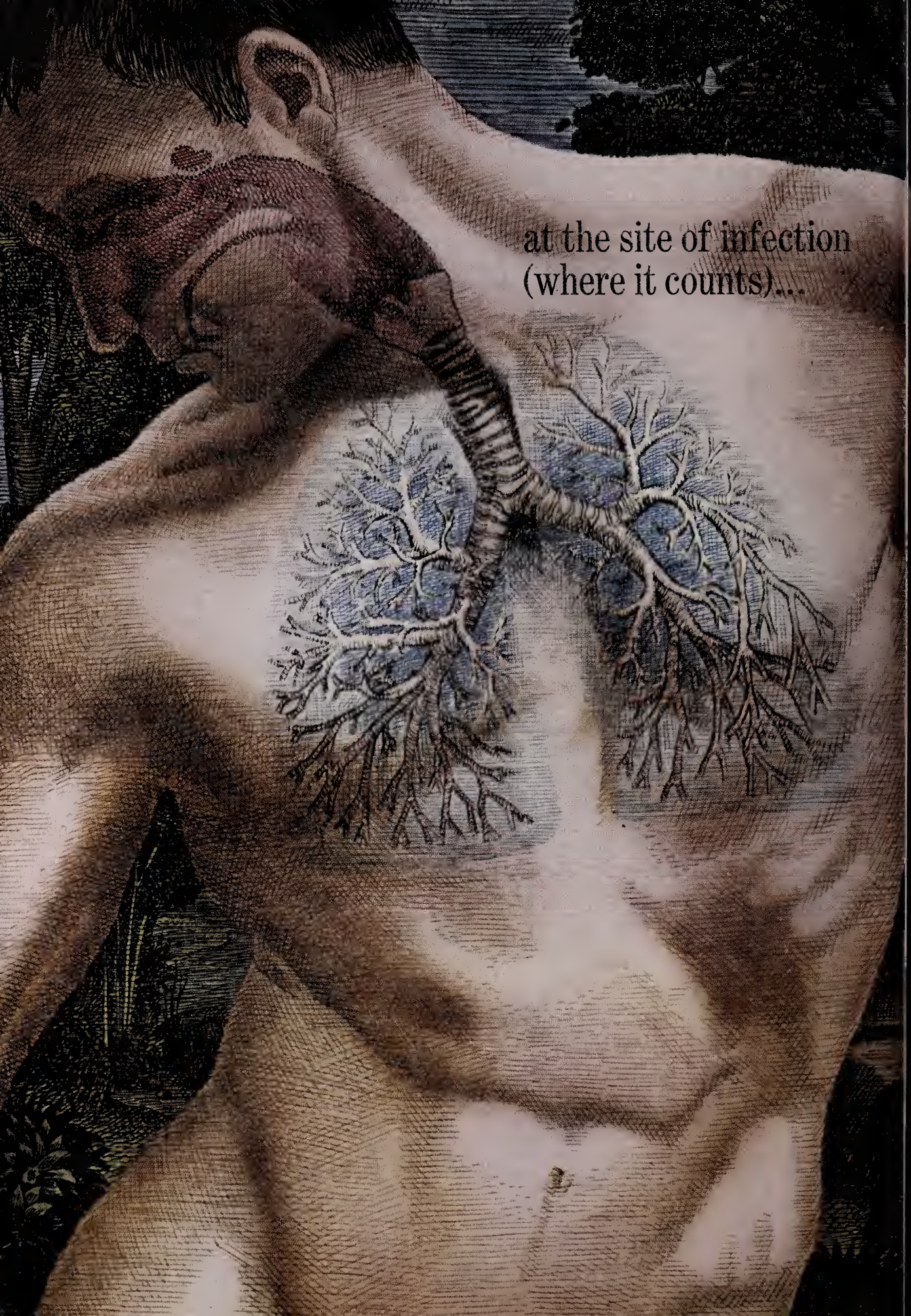
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Indications: Ilosone is indicated in infections caused by micro-organisms sensitive to its action—especially staphylococci, hemolytic streptococci, and pneumococci.

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In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents; surgical procedures should be performed when indicated, and large doses of the antimicrobial agents should be employed.

Penicillin is the drug of choice for syphilis and gonorrhea, but Ilosone in multiple 500-mg. doses has been useful in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Known history of sensitivity to this drug; preexisting liver disease or dysfunction.

Adverse Reactions: Hepatic dysfunction with or without clinical jaundice has been reported infrequently. Changes in liver function tests indicative of intrahepatic cholestasis appear to be the result of individual idiosyncrasy. Findings subsided when treatment was discontinued. Occasionally, symptoms simulated extrahepatic obstructive jaundice or the colic of biliary tract disease.

When jaundice appeared to be related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

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Administration and Dosage: Ilosone is administered orally.

Infants and children under twenty-five pounds, 5 mg. per pound every six hours; twenty-five to fifty pounds, 125 mg. every six hours. Adults and children over fifty pounds, 250 mg. every six hours.

For severe infections, double the dosage. When larger doses are indicated, consider parenteral erythromycin therapy. In beta-hemolytic streptococcus infections, maintain treatment for ten days to prevent rheumatic fever or glomerulonephritis.

In syphilis, a total of 20 to 30 Gm. is administered in divided doses for ten to fifteen days. Close follow-up is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examination of spinal fluid is recommended during follow-up.

In gonorrhea, the dosage is 500 mg. four times a day for four days. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics and monthly serologic tests for three months. For detailed information, consult the package literature.

How Supplied: Pulvules® Ilosone, Capsules, N.F., 125 mg.* and 250 mg.*

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg.* per 5-cc. teaspoonful.

Ilosone, 125, for Oral Suspension, N.F., 125 mg.* per 5-cc. teaspoonful.

Ilosone Drops, 5 mg.* per drop.

Tablets Ilosone Chewable, N.F., 125 mg.*

*Base equivalent. [0809371]

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964. 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962. 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

701464

Don't let monilia cut broad-spectrum therapy short...

start with Tetrex-F®

tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217
Manufacturers of ethical pharmaceuticals since 1856

Butazolidin®, phenylbutazone
In Acute Superficial Thrombophlebitis

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Acute Superficial Thrombophlebitis: Initial: 6 capsules or tablets daily in divided doses for 2 or 3 days. Maintenance: 3 capsules or tablets daily. Usual duration of therapy is 5 to 7 days (rarely beyond 10 days). 6509-V(B)R2

*Stein, I.D.: Presented at the American Academy of General Practice, Dallas, Sept. 1967.

For complete details, please see full prescribing information.

it used to take weeks

Acute superficial thrombophlebitis before treatment

After 5 days of Butazolidin therapy

In acute superficial thrombophlebitis, patients were usually bedfast for 2 to 4 weeks, tying up hospital beds, requiring costly nursing care and time-consuming procedures such as warm soaks and packs.

When Butazolidin was added to the usual regimen, 960 of 1000 patients obtained complete resolution; most required only 30 capsules or tablets; relief of pain and discomfort and regression of inflammatory signs and fever occurred within a few days.*

Side effects occurred in 6% of the 1000 patients. While none were serious or long-lasting, Butazolidin can produce severe side effects in rare instances. Further, not every patient can take Butazolidin. Therefore, select patients with care and follow them closely. Contraindications, Warning, Precautions and Adverse Reactions are summarized in adjacent column.

Butazolidin gets bedfast thrombophlebitics out of bed, fast. Usual duration of treatment is 5 to 7 days, and rarely exceeds 10 days. Try it and see. For full details, please refer to the complete prescribing information.

Butazolidin® alka

Capsules:
phenylbutazone, 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg.

Butazolidin®

phenylbutazone

Tablets of 100 mg.

Geigy

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York

Against these three major pathogens...

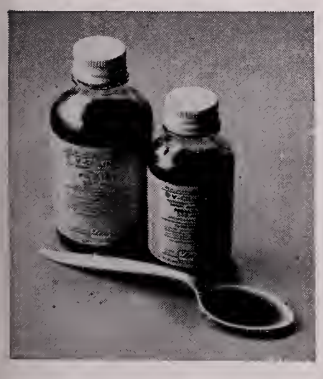
V-Cillin K® provides dependable oral antibacterial therapy

because it combines a high degree of activity...

V-Cillin K has been shown to be effective in the treatment of streptococcus and pneumococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy in patients with a history of rheumatic fever or congenital heart disease.

with high blood levels, even when taken with food

V-Cillin K is stable in acid and immediately soluble. High serum levels, therefore, are reached rapidly. Because it is acid stable, V-Cillin K is well absorbed even when taken close to mealtime. These desirable properties help make V-Cillin K a dependable penicillin for oral use.



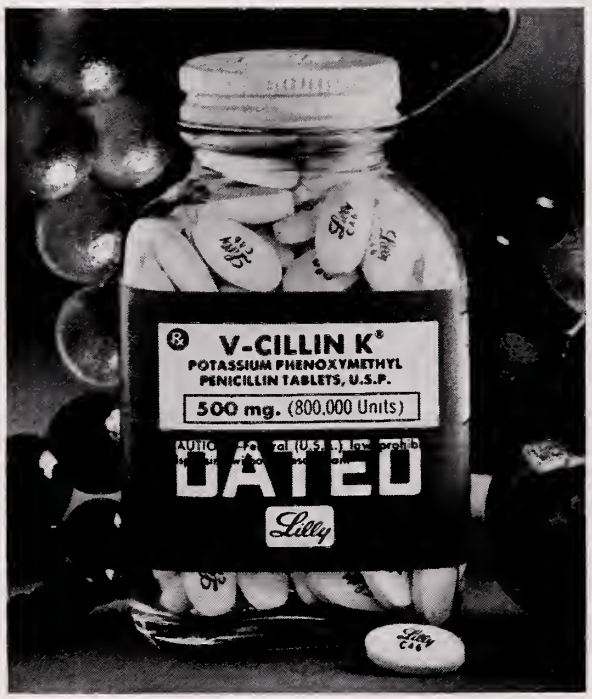
V-Cillin K® Lilly 701449

Potassium Phenoxymethyl Penicillin

Now available: V-Cillin K®, Pediatric, for Oral Solution, 250 mg. (400,000 units) per 5 cc. of solution.

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K, the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly), combines acid stability with immediate solubility and rapid absorption. Higher, more rapid serum levels are obtained than with equal oral doses of penicillin G.

Indications: Streptococcus, pneumococcus, and gonococcus infections; infections caused by sensitive strains of staphylococci; prophylaxis of streptococcus infections in patients with a history of rheumatic fever; and prevention of bacterial endocarditis after tonsillectomy and tooth extraction in patients with a history of rheumatic fever or congenital heart disease.

Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

701449

Hebe knew what every doctor should know...

"Hebe, Cup-bearer to the Gods." An early steel engraving.

Hebe, bless her heart and good sense, knew that wine was man's—and the gods' —**first medicine, the supreme mild tranquilizer for the past 5,000 years or more.**

Hebe served her wine as ambrosia to calm the jitters of Zeus, Poseidon, Hermes, and other early executives, including her husband Hercules. It came from the classic vine, **vitis vinifera,** from which we get **our** magic in California today.

What about **you,** Doctor? Do you use the wisdom of wine to aid your therapy in many types of cases?* Let us prescribe for **you** our free book, "USES OF WINE IN MEDICAL PRACTICE: A SUMMARY." 25 years of worldwide medical research is yours for the asking.

And your wife? Wouldn't she enjoy our very latest free booklet, "CALIFORNIA WINE COOKERY AND DRINKS," designed to make her a veritable Hebe in your home? Write us today.

Here's to you, Doctor, your family and your patients. Happier days with wine!

The Winemakers of California

*Rx WINE: **4 ounces with lunch and dinner daily.** Wine stimulates gastric flow; can help the convalescing patient; can aid the patient lacking appetite; can help relieve anxiety; can help patients suffering from the malabsorption syndrome; helps hospital and geriatric home morale; helps to make meal-time pleasant and relaxing.

Just address WINE ADVISORY BOARD, 717 Market Street, San Francisco 94103, on your professional letterhead. You will receive, free: "USES OF WINE IN MEDICAL PRACTICE," (62 pp.), and "CALIFORNIA WINE COOKERY AND DRINKS."

WINE ADVISORY BOARD, DEPT. C-2, 717 MARKET STREET, SAN FRANCISCO 94103

The high-output shortwave therapy machine that almost thinks for itself...

automatic tuner (Servomat) maintains selected dosage by compensating for patient movement... automatic overload protection...automatic timer and switch-off... simple push-button control...no interference with radio or TV...

Siemens Ultratherm® 608

For additional information, please contact: Dean F. Johnson, Regional Technical Representative, Geigy Pharmaceuticals, 2509 Kensington Ave. Salt Lake City, Utah 84108, Phone: (801) Ingersol 7-8306

SME-2

A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .

Consider starting your hypertensives on this basic thiazide

ABBOTT

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE

DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!

Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

707075-R

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. *Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.*
2. *Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.*

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions.* Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

TM—Trademark

707075-R

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL® | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

TM-Trademark.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅕ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

709075R

ABBOTT

"Horizons of Hope"

ROCKY MOUNTAIN CANCER EXPOSITION

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NOV. 27-DEC. 3, '67

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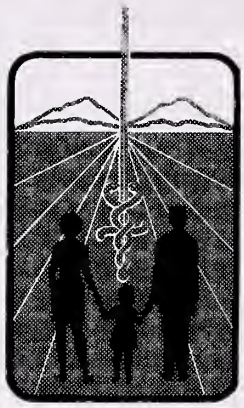

"Horizons of Hope"

ROCKY MOUNTAIN CANCER EXPOSITION

Denver Coliseum • November 27—December 3, 1967

William R. Nelson, M.D.
General Chairman

1756 Gilpin St., Denver
Phone (303) 355-0872

Subject: **EDUCATIONAL nonprofit EXPOSITION for adults and students**

Date: **November 27-December 3, 1967**

Place: **Denver Coliseum, East 46th Ave. at 44th Street, Denver**

Hours: **9:00 A.M. to 9:00 P.M. daily — 1:00 P.M. to 9:00 P.M. Sat. and Sun.**

Purpose

1) To provide 150,000 people up-to-date accurate information on the DETECTION, DIAGNOSIS, TREATMENT and RESEARCH of disease and the REHABILITATION of patients — focus: cancer.

2) To encourage young people of the Rocky Mountain area to seek CAREERS in medicine and allied professions.

Format: Over 87 exhibits in 128 exhibit booths plus a special hospital corridor to interpret the people and facilities of the medical sciences and services. Viewer participation is the key to this lasting familiarization.

Admission: Students to age 18 and children FREE. Adults—$1.00. Advance ticket sales.

Preview: Physicians, dentists and nurses are among those invited to the free opening night invitation preview Sunday, November 26, 7:30 P.M.

Exhibits will include:

—A Hospital Corridor—presenting all services to patients—Operating Suite, Intensive Care Unit, Emergency facilities, Laboratory, Nuclear Medicine facilities, Therapy Units

—Dentistry—in cancer pathology, treatment, diagnosis, research

—Veterinarian exhibits—live animals—fish and bird tumors

—Nursing service exhibits

—AMA's "Life Begins" and "Transparent Lady"

—American Cancer Society's World Fair Exhibit

—Laser and the medical sciences

—Cybernation and health services

—Plant tumors

—Research exhibits

Exhibitors coming from Georgia, New York, Illinois, Ohio, Minnesota, Maryland, Washington, Oklahoma, Texas, Missouri, Colorado and other states.

The AMBAR SCRAPBOOK of

Obesity Oddities

FACT & LEGEND

CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety...helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

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methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

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Indications: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, sinusitis, rhinitis, conjunctivitis, and otitis.
Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

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in sinusitis, colds, U.R.I.

Dimetapp® Extentabs®

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up to 10-12 hours clear breathing on one tablet

"Yes, Doctor, the pain is gone."

EMPIRIN'® COMPOUND with CODEINE PHOSPHATE gr. 1/2 No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning – May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

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Wouldn't you like your patients to learn more about the contributions made by the world of medicine to their welfare? So that they can better appreciate the efforts of the health team to keep them in good health?

To tell the stories of medical and pharmaceutical advances to people throughout the country, the Pharmaceutical Manufacturers Association is sponsoring a unique "magazine within a magazine." It is called *Medicines and your family's health* and the first issue appears in the November *Reader's Digest.*

We would like to send you 50 free reprints of *Medicines and your family's health* for use in your reception room. Your patients will find the articles in this issue factual, educational and of immediate personal interest.

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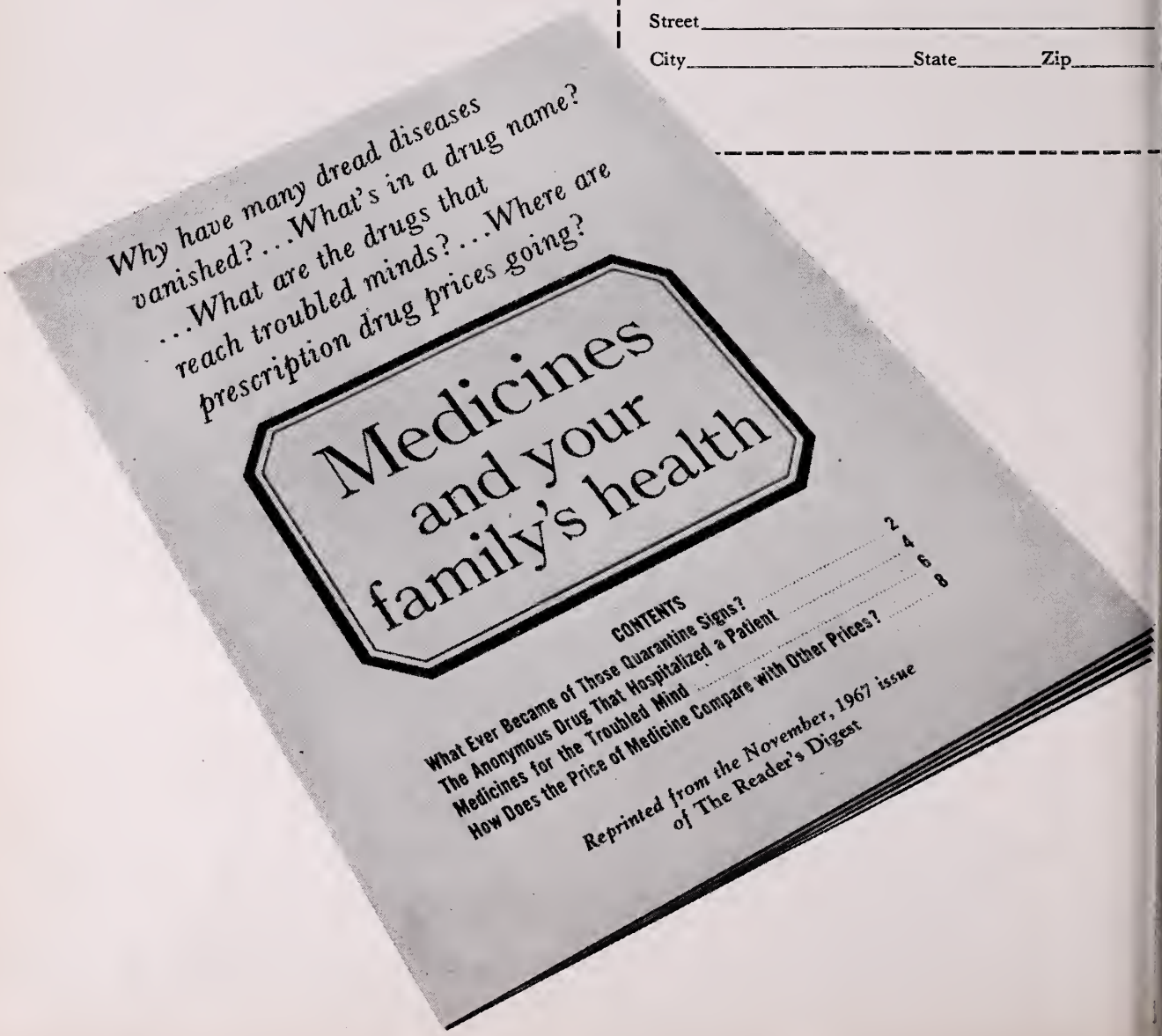

announcing

1968 MEMBERSHIP DIRECTORY

The 1968 edition of the Rocky Mountain Medical Directory will be sent to all active members in the six Rocky Mountain states in March. It will feature a complete roster of the six-state membership including name, address, phone number, specialty and type of practice.

Will you be listed correctly?

(Note particularly change in specialty symbols)

The Executive Office is making every effort to update the 1967 edition and assure complete accuracy in the new publication based upon information brought to its attention since February 1, 1967. You can help by immediately (before December 31, 1967) notifying the Executive Office of any changes in your listing during the past year. The postcard below is for your convenience in giving us information exactly as you wish it to appear in the 1968 Directory.

TEAR OUT AND MAIL THIS CARD NOW ! ! !

FROM

_____

_____

Place 4c Stamp Here

Colorado Medical Society
1809 E. 18th Ave.
Denver, Colorado 80218

See over for more information regarding your directory listing →

EXPLANATION OF LISTINGS AND SYMBOLS

Information concerning each member in good standing as of January 31, 1968, of the six State Medical Societies and Associations is presented in the following sequence:

Surname, Given Name or Initials; Professional Address; Professional Telephone Number; City or Town (with post office zone numbers, if zone numbers are reported to the Editors); Symbol indicating specialty; Symbol or words in parentheses ( ) indicating Field of Practice.

SYMBOLS—Symbols indicate limitation of practice to a specialty, or special interest without limitation of practice, according to the following list as used and recognized by the American Medical Association in its Directories. Physicians retired from practice will be indicated by "Ret." Each member is accorded the privilege of designating his own special interest or limitation of practice by these symbols, but **only one** such symbol may be listed by any member.

ADM	—Administrative Medicine	OM	—Occupational Medicine
A	—Allergy	OPH	—Ophthalmology
ANES	—Anesthesiology	ORS	—Orthopedic Surgery
AM	—Aviation Medicine	OTO	—Otolaryngology
Bact	—Bacteriology	PATH	—Pathology
CD	—Cardiovascular Disease	PATH-CP	—Pathology and Clinical Pathology
CHP	—Child Psychiatry	PD	—Pediatrics
CRS	—Colon and Rectal Surgery	PDA	—Pediatric Allergy
DR	—Diagnostic Radiology	PDC	—Pediatric Cardiology
D	—Dermatology	PM	—Physical Medicine and Rehabilitation
FOP	—Forensic Pathology	PN	—Psychiatry and Neurology
G	—Gynecology	PS	—Plastic Surgery
GE	—Gastroenterology	P	—Psychiatry
GP	—General Practice	PH	—Public Health
GPM	—General Preventive Medicine	PUD	—Pulmonary Disease
GS	—General Surgery	R	—Radiology
IM	—Internal Medicine	TR	—Therapeutic Radiology
NS	—Neurological Surgery	TS	—Thoracic Surgery
N	—Neurology	U	—Urology
OB	—Obstetrics		
ObG	—Obstetrics and Gynecology		

*The asterisk indicates that practice is limited to that specialty; the symbol without an asterisk indicates special attention to, and interest in, that specialty without limitation of practice. Symbol for Internal Medicine and for Public Health is used only when the member stated that he limits his practice.

Symbols or words in parentheses ( ) indicates the member's Field of Practice as follows:

(PP) Engaged in PRIVATE PRACTICE of medicine (either full-time or part-time).

(Intern) Engaged full-time in internship.

(PG) Engaged full-time in postgraduate study.

(Research) Engaged full-time in scientific research.

(Armed Forces) On full-time Active Duty with the Medical Department of the United States Army, Navy, Air Force, Marine Corps, or Coast Guard.

(PH) Engaged full-time in one of the state, district, county, or city public health departments, not, however, with the United States Public Health Service.

(USPHS) On full-time Active Duty with the United States Public Health Service.

(Gov) Engaged full-time in a federal governmental medical activity other than the Armed Forces and the U. S. Public Health Service; includes the Veterans Administration, Indian Service, etc.

(Med. School) Engaged full-time on the faculty of a medical school.

(Student Health Service) Engaged full-time by the established Student Health Service of a university or other institution of higher learning.

(School Health Service) Engaged full-time by the health service of a primary or secondary public school system.

(Exec) Engaged full-time in an executive capacity.

(Ind) Engaged full-time in industrial medicine or surgery by an industrial firm.

(Hosp) Engaged full-time by a hospital.

(State Hosp) Engaged full-time by a state-operated hospital.

(Student) Member of local chapter of the Student A.M.A.

(Non-M.D.) Non-physicians engaged in medical teaching or in the practice of professions closely allied to medicine.

Extra Directories Are for Sale While They Last

One Directory is mailed free of charge to each member of the six participating state medical societies as a service of the Journal. Other persons having legitimate need for the Directory may purchase copies at $5.00 each. A member may purchase one additional copy for his personal use at $3.00, but will be billed $5.00 per copy for any additional or subsequent orders.

USE THIS CORRECTION CARD →

Correction, Please!

Please correct and add my listing to the 1968 **Rocky Mountain Medical Directory** as follows:

Name _____ Tel. No. _____

Office Address _____

City _____ State _____ Zip Code _____

Specialty _____ Field of Practice _____

One only. If limited exclusively, indicate by asterisk* — One only. See listing.

If there are any corrections or additions to your listing as it is now carried in the 1967 Directory, return this card no later than December 31, 1967, which is the cut-off date for changes. Please sign below to indicate that you have verified the above changes.

_____
Signature

DUAL PROBLEM IN PEPTIC ULCER

Relief of hyperacidity is still a primary goal in the treatment of peptic ulcer. And antacids are the most widely used means of achieving this relief. But antacids alone cannot influence the distention and bloating which so often add to ulcer distress.

THIS IS WHY MYLANTA® PROVIDES:

the two most widely used antacids—magnesium and aluminum hydroxides—to help secure rapid acid neutralization with little chance of laxation or constipation;

PLUS

the defoaming action of simethicone—to help relieve the painful gas symptoms which often accompany peptic ulcer.

Mylanta®

antacid therapy plus an added benefit

nonfatiguing flavor/smooth pleasant texture; both assure patient cooperation during long-term therapy.

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in chronic illness

B and C vitamins are part of therapy: An imbalance of water-soluble vitamins and chronic illness often go hand in hand. STRESSCAPS capsules, containing therapeutic quantities of vitamins B and C, are formulated to meet the increased metabolic demands of patients with physiologic stress. In chronic illness, as with many stress conditions, STRESSCAPS vitamins are therapy.

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RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
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Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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Picture of painful myositis

treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

Parafon Forte helps to relieve pain, restore mobility . . . stop pain-spasm feedback

Here is why. PARAFON FORTE provides:

a nonsalicylate analgesic equal to aspirin for the relief of pain,[1,2] yet unlikely to produce the irritation to the gastric mucosa so often associated with salicylate therapy[3]

and a skeletal muscle relaxant shown to have up to a 6-hour span of action,[4-6] and to retain effectiveness even on continued administration,[5-7] but which does not have the central effects of tranquilizing compounds.

Prescribe PARAFON FORTE for lasting spasmolysis and analgesia in sprains, strains, myalgias, low back pain, bursitis and other musculoskeletal disorders. Your patients will appreciate the restored comfort and lasting freedom of movement it usually provides.

Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

McNEIL

*U. S. PATENT NO. 2,895,877

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"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

The long-continued action of Novahistine LP should help you both get a good night's sleep. Two tablets in the morning and two in the evening will usually provide round-the-clock relief by helping clear congested air passages for freer breathing. Novahistine LP also helps restore normal mucus secretion and ciliary activity—normal physiologic defenses against infection of the respiratory tract. Use cautiously in individuals with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result. Each Novahistine LP tablet contains: phenylephrine hydrochloride, 25 mg., and chlorpheniramine maleate, 4 mg.

NOVAHISTINE® LP

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easy does it!

tear, moisten, compare–that's all!

Rocky Mountain Medical Journal—Viewed from A Vantage Point

Our Editorial Board of the Rocky Mountain Medical Journal which consists of the Scientific Editor, Assistant Scientific Editor, and the Editors of the participating states other than Colorado, plus the Managing Editor, his assistant and Business Manager, and our editorial assistant, held its annual meeting in Colorado Springs during the recent Annual Session of the Colorado Medical Society. It was a breakfast meeting held in the Terrace Lounge of the Broadmoor Hotel on September 21. Many interesting discussions accompanied a review of the Journal's fiscal year. As you have noted, advertising has increased in quality and diversification. Much of it has been in color, and many distinctive advertisements represent the support of the firms who also had booths and representatives in the International Center of the Broadmoor. Thus, our financial condition is good. Affiliation with State Journals West, instead of the State Medical Journal Advertising Bureau (SMJAB) has worked out well from every standpoint.

We wish to urge authors to remember that the deadline for receipt of copy is the first of the month preceding the month of issue in which the material is to appear. It is impossible for our printers to set the type, print the galleys, followed by mailing and editing prior to final printing unless adherence to deadlines is strict. Otherwise authors' corrected and approved galley cannot possibly be returned and processed in time. Few "consumers" are aware of the amount of work and the complexity of this mill whereby each issue is conceived, nurtured, and born!

We are proud of the special issues and particularly their distinctive covers. The photographs and paintings have been enthusiastically accepted, and favorable comments have been many. There is great hope that this project will be continued. Enthusiasm for the special issues has grown, and the amount of copy received has often exceeded available space. Thus, some of our states have hoped to have more than one issue per year. This does not appear to be feasible, however. Disregarding Colorado, which does not produce a special issue, there would then be ten per year. Members of the Board and the employees who work so hard to plan and compile these issues do not wish to "burn out" the tradition which now is well established. It will be better to have only one special issue per year for each state rather than chance attrition of our resources. There is no lack of quality copy forthcoming thus far to represent fairly the physicians and medical institutions of the several participating states of our large geographic area.

The special features — Shadow or Substance, Potpourri, contributed Editorials, Correspondence, Children's Hospital, Medical School Notes, and Book Corner—are popular. We hope for more material from the medical schools of Colorado, Utah, and New Mexico. At least one faculty member in each University should be responsible for procuring and forwarding the copy regularly. Clinicopathologic Conferences and unusual case reports are well received. Signed editorials, especially by the state editors, should appear more often; they liven these columns and break the deadly monotony of only one or two editors in Denver. All of us should be alert for talent and willingness to assist in the growth and popularity of this Journal. Authors, potential authors, and even the editors need frequently to be reminded of the existence of Publication Rules and Suggestions to Authors in the front pages of your directory. They provide a helpful guide in composing material for publication, especially scientific articles and case reports. Adherence to them results in better articles, facilitates their progress through editorial channels, saves time and minimizes correspondence.

THE 14TH Rocky Mountain Medical Conference, August 27 to September 1, goes down in history as one of the best. We must admit that a meeting in the beautiful northwest corner of Wyoming could hardly miss!

Rocky Mountain Medical Conference at Jackson Lake Lodge

Weather was perfect except that the outdoor barbecue was rained out by the only business-like shower which occurred during the entire time. It was unfortunate, but nobody seemed to mind as the crowd followed the drinks, food, and accoutrements with an able kitchen staff back to the main lodge.

The thrill of viewing Jackson Lake and the Tetons through the giant picture window was just as thrilling to all who had viewed it before as it was to those who saw it for the first time. Opportunities were available for trips to Yellowstone, about the lake, and down the river for those who chose to explore. Guest speakers handled their assignments well, and the scientific sessions consistently attracted enthusiastic capacity audiences. The maze of technical and scientific exhibits were as attractive as they were instructive. We appreciate the continued support of the exhibitors at our meetings and also those who patronize the advertising columns in this Journal.

Twenty-nine states were represented—one each from Alabama, Connecticut, Iowa, Indiana, Massachusetts, Michigan, Nebraska, North Carolina, North Dakota, Pennsylvania, and South Dakota. And they didn't come just to see the bears in Yellowstone Park! From 2 to 6 each came from Arizona, Illinois, Louisiana, Minnesota, Nevada, New York, Ohio, Oregon, Washington and Wisconsin. Twenty-one came from California, 23 from Colorado, 8 from Idaho, Montana 7, New Mexico 10, Texas 8, Utah 16, and Wyoming 89. There were totals of 223 M.D.s, 105 exhibitors, executive secretaries and others 24, wives and families 223—altogether 575.

We are grateful to Wyoming for splendid hospitality and a gorgeous setting. Looking forward to this next distinctive biennial meeting in Salt Lake City in 1969!

OUR COVER REPRODUCTION of Charles M. Russell's painting, "Indian Hunters' Return," marks another first in the history of the Rocky Mountain Medical Journal. Our cover is the first fold-out, or gatefold cover, in the history of the Journal.

"Indian Hunters' Return"

We are pleased that we are able to reproduce another painting by one of the West's truly outstanding artists. In May, 1967, we ran our first four-color cover, a Russell painting entitled, "Free Trappers." Charles Russell had an intimate knowledge of life in the old west. He lived and worked with Indians and cowboys in Montana and Canada during the late 19th and early 20th centuries. His faithful illustrations of life in these times are completely authentic, catching the details of a vanishing time and scene.

You may purchase a 33 by 22-inch deluxe oil reproduction of our cover painting for $13.00 or an oil on canvas reproduction of the same dimensions for $25.00. These reproductions faithfully reproduce each brush stroke in an amazing process that nearly duplicates the original painting. Please make your check payable to the Rocky Mountain Medical Journal and mail to the Journal at 1809 E. 18th Ave., Denver, Colo. 80218.

It is our plan to print reproductions of famous Western art on our cover, and from time to time offer quality reproductions of these paintings. Your comments and suggestions will be most welcome.

Don Derry, Mng. Editor

Title XIX—Watch Out For Quackery

QUACKERY AND CULTISM must be the number one target for elimination in the implementation of Title XIX. Permissive definitions in Title XIX allow the States to lower the standards of the practice of medicine to those prevailing when a Rockefeller sold patent medicines on the streets as "Cures for Cancer" and B. J. Palmer founded the business of chiropractic.

In Title XIX, provisions for professional services are set forth in two ways. "Medical Assistance" is defined as payment of part or all of the following care and services: (1) physician's services, whether furnished in the office or in the patient's home, a hospital, or a skilled nursing home or elsewhere; (2) medical care, or other type of remedial care recognized under state law furnished by licensed practitioners within the scope of their practice as defined by state law, any other type of remedial care recognized under state law, specified by the secretary. In the provisions for physician's services, "physician" is not defined. In the provisions for medical care the vendor of the services need only be recognized as a practitioner by state law.

Pandora's box has been opened! Yet in Dr. Appel's address to the House of Delegates, November 28, 1965, he said, "In any event, Title XIX embodies practically all of the principles that AMA has recommended with respect to eligibility benefits and administration. In a true sense it is our bill." Dr. Hudson, representing the AMA before the House Ways and Means Committee considering HR 5710, the Social Security amendments of 1967, opposed the inclusion of podiatric services but failed to recommend that the scope of medical care provided exclude authorization for chiropractors, faith or spiritual healers, and other licensed healers. The House of Delegates at the annual meeting on June 26-30, 1967, took a "strong stand" in favor of the Title XIX portion of medicare. (AMA News, July 3, 1967.)

Could it be that the AMA delegates and officers in considering provisions of Title XIX think that the only individuals authorized to practice medicine in the fifty states are doctors and osteopaths? Have we failed to recognize that chiropractors are licensed to practice medicine in forty-eight states and that they may be authorized under Title XIX to care for beneficiaries of Title XIX in the hospitals, offices, and skilled nursing homes and also that they may possibly participate in funds appropriated for training of professional personnel?

Twenty-nine states and territories have Title XIX medicaid programs in operation, two have submitted plans for approval, two have enacted implementing legislation, eight have legislation in the mill, and one is preparing to submit a plan for approval. (AMA News, May 1, 1967.) All twenty-nine states have listed "physicians" services in their scope of services. Services of chiropractors have already been included in some of these. George Slagle, M.D., chairman of the Council on Medical Services of the AMA, wrote that determination had been made by the Michigan attorney general's office that chiropractors must be paid under Title XIX in Michigan.

On May 1, 1966, New York implemented Title XIX, including practitioner's services, physician's services, in office, patient's home, a hospital, a skilled nursing home or elsewhere, services of optometrists and podiatrists. On January 30, 1967, the AMA News reported that New York's Title XIX (Medicaid) program had been expanded to include chiropractors. Hollis Ingraham, M.D., health commissioner of New York, said legal experts had reviewed the medicaid law and decided licensed chiropractors are included as "providers of service." The action by the state health commissioner was hailed by the chiropractors, and termed "regrettable" by organized medicine.

On March 1, 1966, California implemented Title XIX. On May 29, 1967, the AMA News reported the action of the California Medical Association requesting the California Health and Welfare Agency to remove chiropractors as providers of health services under the Title XIX program, and the adoption of a resolution which would remove chiropractors

from providing services under group health plans and workmen's compensation. The California Medical Association has work to do to get their state legislature to change provisions made effective on May 1, 1966, but at least they have taken a step on the "road back."

In Colorado, Senate Bill 300 was introduced March 1, 1967. In its provisions "medical assistance" means "payments on behalf of recipients to vendors of medical services for medical care, services, goods." Vendor is "any person, institution, agency or business concern providing medical care, services, goods, authorized under this act, holding where applicable a current valid license to provide such services or to dispense such goods." These provisions would entitle chiropractors to care for beneficiaries of Title XIX since chiropractors are licensed to practice in Colorado. The Position Paper of the Colorado Medical Society, submitted to the Welfare Department, urged that the Colorado plan cover services of practitioners other than physicians and osteopaths only upon referral by a physician or osteopath—but this provision was not incorporated in Senate Bill 300.

"Physician" as defined under Title XVIII (Medicare) contrasts importantly with the definition in Title XIX (Medicaid). Title XVIII defines the term physician, when used in connection with the performance of any function or action, "The Doctor of Medicine or Osteopathy legally authorized to practice medicine and surgery by the state in which he performs such function or actions." Setting up standards for hospitals, Title XVIII defines "The term provider of services means a hospital, extended care facility or home health agency, and under (2) sets up standards for hospitals equal to those required by the joint commission on accreditation of hospitals."

These definitions of "physician" and "hospital" were placed in Title XVIII through the influence of AFL-CIO. "The AFL-CIO opposed the inclusion of chiropractors in the bill, since it felt, as did the AMA, that they were not strictly medical practitioners." (The New Yorker—July 23, 1966, p. 55.) We had a position of strength with AFL-CIO agreeing with the AMA that chiropractors are not medical practitioners. Moreover, the Senior Citizens Group expressed the same opinion in the hearings conducted by the House on the Social Security amendments of 1967. In addition, on October 12, 1966, the supreme court upheld the decision of the federal court in the case of England v. Louisiana State Board of Medical Examiners. The supreme court reaffirmed the ruling by denying a petition of the chiropractors for a rehearing. The district court, New Orleans, had ruled that the State of Louisiana could properly refuse to license chiropractors under the state's Medical Practice Act. The court in a unanimous ruling said "There has been no showing here that the state has done more than is necessary to protect the health of the citizens." The court's opinion also noted, "If the education obtained in chiropractic schools does not meet the standards of the United States Office of Education, it may well be that the legislature of Louisiana felt that in the public interest a diploma from an approved medical school should be required of a chiropractor before he is allowed to treat all the human ailments chiropractors contend can be cured by manipulation of the spine." That decision should have been useful in preventing the widening of the licensure and of activities by chiropractors. It is also significant that the Health Careers Guidebook recently issued does not list chiropractors.

The American Medical Association should ask Congress to define physician under Title XIX as physician is defined under Title XVIII—and the time to do it is NOW.

John B. Farley, M.D.*

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*Dr. Farley was a member of the Colorado State Board of Medical Examiners for 25 years and is a former member of the Legislative Council of the American Medical Association.

Presidential address--Colorado medical Society*

Henry H. Zeigel, MD, President, Colorado Medical Society

BRIEFLY, a year ago, I thanked this House of Delegates and the membership of the Colorado Medical Society for the honor, privilege, and responsibility of serving you as your President-elect. After having served in this capacity with your capable and untiring President, Dr. Myron Waddell, the elected and appointed officers, and the Executive staff, I want to again express my deep appreciation to each of you. I look forward to serving you, as your President, with enthusiasm and deep concern for the goals and ideals that we have set.

This year of orientation has increased my awareness of the efforts and thoughtful leadership of the distinguished succession of presidents and officers who have contributed to the objectives of the Colorado Medical Society through almost a hundred years. The objectives through these decades have remained unchanged—supplying the best possible medical care to the largest number of patients at a cost in keeping with the economics of the recipients.

I have no misgivings about the year that lies ahead. The work of your officers and executive staff has been multiplied by the ever-changing social-economic profile that profoundly affects our nation and the practice of medicine. It has always been a privilege and a deep sense of satisfaction to be associated with you and to have worked through these years in organized medicine. This organization could not have gained and deserved the respect and confidence of the thoughtful citizens of this great state, had it not been for your deep concern and your unselfish interest in the health and welfare of all of our people. The accomplishments and the esteem that this society enjoys has continued from the organization of the Colorado Territorial Medical Society. The 25 pioneering doctors of medicine organized this Society in an era when travel was tedious and communications were slow; however, their needs for continued education and the exchange of ideas were as important to these frontier doctors who were meeting the challenges of the West as is our interest in 1967. If I could choose one text suitable to our rich heritage of Colorado medicine, it would be from the Book of Isaiah, chapter 51, "Look to the rock from which you were hewn and to the quarry from which you were digged." Organized medicine was necessary then, and it is increasingly necessary today. We are all indebted to the hundreds of member physicians who continue to give so freely of their talents, their time, and their goods to serve the cause of scientific medicine. This dedication and work cannot be purchased. If it were for sale for a fee, we could not afford it. If there are doubts in your mind as to the validity of this statement, you need to become more involved.

Our Executive staff members, under the competent leadership of Mr. Don Derry, our Executive Secretary, give of their time and energies with remarkable dedication. Theirs is a way of life, and they have so abundantly earned the confidence of this House and the membership of the Colorado Medical Society.

*Inaugural address presented at the 97th Annual Meeting of the Colorado Medical Society, September, 1967.

Mr. Pete Nordlund, our legal counsel, adds his experience and direction on which this Society leans heavily and values greatly. We are grateful for the fine representation of this Society by our AMA delegation. This delegation has gained, deserved, and enjoy outstanding respect at the national level. Colorado is known at the AMA level as "the state that gets things done." We are proud of the traditional devotion of every member of this House of Delegates. We are aware of the time, effort, and expense involved while you are attending these meetings representing your constituent societies. Many state medical societies face the problem of having a quorum present in their sessions at the House of Delegates, while we enjoy a full intelligent representation of almost every society throughout the state.

Every member of this Society, I am sure, will join me in expressing our appreciation to the directors of the Department of Public Health, the Department of Welfare, the Department of Health, Education and Welfare, and the Regional Medical Program, popularly known as the Colorado-Wyoming RMP. Your participation in our meetings will continue to enhance our understanding of our mutual problems.

National legislation

This House of Delegates, Committees, and Councils might well remember the words of the Speaker of the House of Representatives, Mr. John McCormack, at the opening of the last session of Congress. He said, in effect, "This Congress should review the legislation passed by the last Congress and find ways and means of implementing this legislation, improve it, and finance it before more health legislation is introduced." With the sweeping changes in the advancement of scientific medicine, we have become extremely attractive to the politicians of these United States. The electorate has been promised what *government cannot deliver*—our time, our talents, and our accumulation of scientific knowledge, as well as our administrative abilities. Our citizens *should have been promised* only the payment for our services. With this objective thoroughly confused, we have, indeed, needed a multiplicity of committees to deal with and clarify these new laws and directives that could threaten the best medical services to our patients, our patient-doctor relationship, and the economics of giving the best possible service to the greatest number of patients at the lowest possible cost.

We should make every effort to keep the number of these committees at an efficient minimum and limit the membership of these committees to an efficient representation of all the members of the Colorado Medical Society. When resolutions are introduced, the sponsors should consider the cost of Society funds and the time required in their implementation. The reference committee should also consider the fiscal responsibility involved and the cost should be as accurately stated as possible when they are presented to the House of Delegates for its approval. Time and confusion may also be saved by avoiding resolutions that have, in essence, been passed at previous sessions, unless it is necessary to emphasize or reaffirm their importance. Expediency is usually not economical, either in time or expense.

A considerable amount of our time might be saved at all levels of organized medicine by avoiding lengthy discussions on legislation which has become the law of the land. Our time could be more profitably spent guiding the implementation and supporting directives that are in the best interest of our citizens. After a poor law is enacted, it can only be changed by the education of the voters and by the election of representatives to our Congress and State Legislatures that are willing to work for the amendment or the modification of laws that are found not to be in the best interest of all the people. Existing laws can only be changed or amended by legislative procedure. With these legislative changes, we can more effectively help by supporting our organization of AMPAC at the national level and COMPAC at the state level. This is our voice in politics and our effectiveness in this important arm of service will be in direct proportion to the support we give individually in time, money, and services. The successes and increasing need and demands on this organization should convince every member of the Colorado Medical Society that his support is vital

and justified. It is most encouraging to see the interest of our senators and congressmen in AMPAC and to hear their expression of thanks to this organization for its support of the candidates of both parties whose philosophies are in keeping with the best interests of our democracy. We should individually, and through our Political Action Committee, continue to support vigorously, physician candidates who make themselves available for public offices.

Continuing personal involvement

When the desire and need for continuing education and the exchange of ideas brought the founders of Colorado medicine together, they were not plagued, as we are today, by an overwhelming number of staff, county, state, national, and sectional meetings. We are in a favorable position for making a choice of the meetings we attend. We may select the ones most rewarding in our particular field of interest. In order to meet the needs and to effectively fulfill the obligations that go with the privilege and responsibilites we enjoy, we must maintain not only the opportunities of continuing medical education, but also, the need of motivation on the part of physicians to continue their interests in this rapidly moving era of advancement and change in scientific medicine.

When the physician completes his years of training in the university, medical school, and hospital, he is tired from this routine that has gone on for so many years. A chance for a period of rest from this exposure is understandable; however, he should guard against having this period of mental fatigue last over many decades. We have a deep and valid interest in the field of continuing medical education. It is hoped that our medical schools, the Colorado Medical Society, and perhaps federal agencies will find a way to replace the physician while he leaves his practice for study without disrupting the service he is giving and without the frustration of his trained office personnel. In medical education, we should utilize the most modern means available in this age of sophisticated communications. There are still frontiers in medicine. There is still an exciting need for the continuation of medical education.

Many scientific strides have been made. Many social-economic changes have been quickly thrust upon the lives of all Americans, and changes will come more quickly in the future. We must be well informed in order to intelligently separate the good from the new. We must be aware that changes—social-economic, moral and political—by the very nature of our democracy, may alter the way of life of the entire population of these United States. Dr. Rouse pointed out in his inaugural address, and I quote, "The strength of every facet of American life is dependent on the strength of others. No one part of our nation can succeed if the others are failing." We would be something other than first-class citizens if we did not have a deep concern relative to the cost of government. For example, the necessity of raising the national debt with each succeeding Congress in order to finance deficit spending. As thoughtful citizens, we must involve ourselves in politics—and especially the fiscal responsibility of our government—as seriously as we involve ourselves with legislation that might threaten the quality of medicine.

Separating opinions from facts

Since the implementation of Medicare legislation, we have had time to separate opinions from facts. Organized medicine made recommendations and estimates of cost to this administration and to the Congress long before this legislation became law. The American Medical Association recommended in the hearings that the recipients of tax-supported medical care should be based on financial need; that medical insurance could be purchased for this segment of our older aged people on the open market at a great saving in administrative costs; that there would be an unreconciled tax inequity since the young families who are buying food, shelter, clothing, and educating their children would assume the financial responsibility of providing medical care for citizens over 65 years old. Many of these recipients of Medicare are more capable, financially, of assuming the responsibility of their medical care than the younger wage-earning families. The estimation of the cost of Medicare made by the American Medical Association and the

American Hospital Association has proved to be more realistic than the estimates of the administrative planners.

There is a wealth of experience in socialized medicine during the past several generations that is available to us. From this history, we should learn much that could save our people from many of the disappointments of this age-old system. We should try to understand the circumstances that brought about socialization in other countries, and to determine if socialization, including socialized medicine, has solved their problems. One of my thoughtful teachers and counselors in 1934 gave me a book to read. The title is *Little Man, What Now?* by Hans Fallada, published by Simon and Schuster. I would recommend that you read this entertaining book of fiction. It is not so startling to find that for the Little Man, in 1934, social security, socialized medicine, and unemployment insurance did not solve all of his problems. Probably many of our citizens of voting age believe that these programs are new and that an intelligent political group has given us a special elixir that will cure our social and economic ills. This product is marketed without a caution label as to side effects or overdosage, and with no regard for research or clinical investigation—only a guaranteed cure.

Dissemination of information

Much has been done to improve the dissemination of information to us as individual members by our American Medical Association. We are urged, by our president, Dr. Milford Rouse, to read, regularly, the AMA News, and the first ten pages of the AMA Journal. This, Dr. Rouse feels, will keep us reasonably well informed as to the current news from the American Medical Association headquarters. I would also urge you to communicate with your office staff of the Colorado Medical Society, and the AMA Field Representative, as often as you have questions or problems for which you need direction. In the present administration of the AMA, I am convinced that you will find a renewed eagerness for your opinions and counsel—the grassroots of medicine. I trust that you have all read Dr. Rouse's inaugural address. From it you will get a good idea of the type of leadership that we can expect to courageously serve the American Medical Association through the ensuing year.

Continuing education

The effectiveness of the training of medical students and the continuing medical education for practicing physicians will continue to be reflected by the cooperation of the medical school, research facilities, and the physicians in practice. The postgraduate meetings, hospital rounds, and the time given to consultation with practicing physicians by faculty members of the University of Colorado School of Medicine has been an outstanding contribution. For your unselfish devotion to the needs of those of us who have taken freely of your time and talent, we thank you. The membership of your faculty in the Colorado Medical Society, and your participation and wise counsel on committees, do much to keep us in touch and mutually enlightened on matters of common interest. We urge more of you to become members of the Colorado Medical Society. With a greater interest and involvement, by the teaching staff, and the research departments in this organization, the void between education and the practice of medicine would be enormously narrowed. The enthusiastic willingness of the practicing physicians to sponsor a senior medical student and his family should soften the transition from medical school to the practice of medicine. Should the interest and response to the program seem rewarding, it would, I am sure, be possible to enlarge the scope of this social-professional relationship to include all of the medical students and their families.

This doctor-student relationship can be a continuation of the health-career activities. Again, we owe our thanks to the Women's Auxiliary of the Colorado Medical Society for the splendid work they are doing in the health-career field. I urge each of you to read carefully the report from the Board of Trustees on the activities and needs of the Health Careers Council. I would recommend that our efforts be directed to the junior high students, as well as the upper classes. In most schools, the efforts of the medical and para-medical groups present the only image of health-careers to the students.

Many of these young people, with the image of other professions before them, have decided on their careers long before their junior and senior years in high school. We agree wholeheartedly with a comment carried in the Press Section of the July 1967 Reader's Digest. "At the very least, Congress should consider making some exceptions to minimum wage requirements for teen-agers who need the apprenticeship of early jobs if they are to become the skilled workers of tomorrow." In any ramification of health care, we need and enjoy dedication, not a contraceptive against the love of accomplishment and work.

Manpower

The question of manpower in the field of health care is one of deep concern. The need in the field of family practice in both rural and urban areas has attracted the attention of our AMA, our CMS, as well as non-professional committees. The State of Arizona has established a new medical school especially planned in faculty and curriculum for the education of family physicians. They are now in the process of registering their freshman class. Compared to the national need, this is a small beginning. It has the possibility, however, of keeping the image of the family doctor before the medical students who frequently begin their formal training with this ambition in mind.

The utilization of the help avaliable in the broad field of health care has been most efficiently utilized. Under our system of private enterprise, we can be assured that doctors, clinics, and hospitals will continue to guard against waste and duplication. The delivery of health care should be left to planning and implementation at the local level. Each office and each institution face problems that can only be solved on a basis of the needs from area to area. Our support of the Nurses Association in the broad field of nurses training courses will do much to encourage more interest in the nursing profession. This Society has an opportunity to seek out areas of deficiencies in health care. Financing surveys and implementation of health care service in these areas of deficient, or complete absence of medical care, deserve our immediate and thoughtful consideration.

Conclusion

Ours is a great responsibility in keeping with the privileges that we enjoy. The overwhelming credit for the stature of medicine in our state will continue to depend on the service and quality of medicine that we practice in our office and hospital facilities. We are entrusted with the most precious of all possessions, that of the health of those who depend on us for health care. We are privileged to be associated with each other in this unique organization whose objective is that of exploring ways of keeping and improving the health of our fellowmen. I know that you are looking forward to the time when we can, again, devote a greater portion of our meetings to the presentation of scientific papers and far less time to social-economic problems.

Be assured that during my tenure of office, I shall—with your continued devotion to our profession, your support, and your prayers—serve the interests of the membership of the Colorado Medical Society, and those we serve, to the best of my ability. •

New Professional Educational Film List

The American Cancer Society has allocated approximately one-half million dollars to production of new education material for its entire professional film library.

A list of available films will be sent on request. Contact American Cancer Society, Colorado Division, Inc., 1764 Gilpin Street, Denver, Colorado.

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Presidential address--Wyoming State Medical Society*

Ray K. Christensen, MD, Powell, Wyoming

FOR THE PAST YEAR my main worry has not been what speakers will I get, or will the program be completed in time, or will I do a good job as president. My chief concern has been, "What am I going to say when I give my Presidential Address?" I have already said more than enough through the mediums of Pulse and the Rocky Mountain Medical Journal and even occasionally through the newspapers and radio where I have sometimes been misquoted. My talk will not be long and I certainly hope it will not be boring.

My original plan was to give a long scientific talk on the progress of medicine and the effects of politics, but a talk of this sort frequently bores me, especially if someone else is giving it, and most of you would see through my smoke screen and realize that I didn't understand myself what I was saying. I wish to thank you for permitting me to be your President this past year. It has been both an honor and a privilege. Any success I may have achieved as your President cannot rest on my shoulders alone, because I must give credit to the many physicians who, almost without exception, were so helpful throughout my term of office. The most redeeming aspect of being your President has been the help and cooperation I have received from the Wyoming physicians. The Wyoming State Medical Society is composed of the most warm-hearted and friendly physicians in the country.

Permit me one personal observation: The suggestion has been made that the Wyoming State Medical Society should become an autonomous organization. This is well intended, but it is much more complicated and involved than just that. To do so would more than double our budget and not necessarily be an improvement. The old argument of conflict of interest does not hold up. You must consider the integrity of the men involved and the circumstances. Is there conflict of interest when a nonsurgeon continues to treat recurrent tonsillitis, rather than refer for a tonsillectomy? Is there conflict of interest when a surgeon takes out an appendix that isn't exactly "hot" because a patient complains of recurrent lower abdominal pain? I think not. The same applies to the Wyoming State Medical Society. Our Executive Secretary and Legal Counsel may not always agree with us, but they are specialists in their field and I know their interest in the Wyoming State Medical Society is primarily for the best for the Wyoming State Medical Society. I think we have a good system that should not be changed.

Dr. Rouse, the President of the American Medical Association, has asked that all physicians become more active in community activities, politics, and the affairs of the nation. Obviously it is long past time for us to take an active interest in affairs that are not directly related to medicine. The time is long past to merely practice medicine. Granted, our training was limited to the field of medicine, but we can no longer limit our interest and activity to such a small area. I emphasize the word "actively." Like faith without good works, interest is only lip service without meaningful activity. Many of us come out of our medical shell or come down from our ivory towers only when something affects us directly. What affects others, our patients, will eventually affect us too. An example is one physician who contacted me because he had heard some statements I had made and

*Presented before the House of Delegates at the 64th Annual Session of the Wyoming State Medical Society at Jackson Lake Lodge, August 29, 1967. Dr. Christensen was President 1966-1967.

didn't agree with them and was angry. It didn't matter that these statements were taken out of context and that an entirely different meaning was made out of them. I wasn't upset with him because he disagreed with me. In fact, I didn't agree with what I had allegedly said, myself. But I was upset because, to the best of my knowledge, this was the first time he had expressed an opinion to the Wyoming State Medical Society, and then only because it affected him directly —or at least he thought so.

There are many older physicians who say they have done their share in preserving free medicine. They fought against the Murray-Dingle-Wagner Bill, the Forand Bill, and other bills, including Medicare and Medicaid, which have attempted to and succeeded in partially socializing the practice of medicine. They say they are tired now and it is time for someone younger to take over the fight. I agree it is time younger physicians take a more active interest in their futures, but we also need the knowledge, experience, and advice of the veterans. Quitting now is like a physician who says that he has treated this patient for pneumonia three times, now, and he isn't going to treat him for it again. As long as a physician is practicing medicine, and even after he quits, I feel he has a responsibility to his profession and to himself to remain mentally active and alert.

Needless to say, this takes time, effort, and money. There are many physicians who are unhappy with what has happened in the past in regard to medical politics. They are more than willing to complain to their hunting and fishing or golfing friends, and perhaps even in a staff meeting if they attend any, but they won't take the trouble to contact their Representative and let him know how they feel. Each politician probably has a physician somewhere whom he knows and respects and trusts. I feel it is up to us to inform these Representatives about how we feel and why. If we would do this, perhaps some of the governmental intrusions into medicine and other aspects of our private lives could have been prevented.

In Wyoming we are fortunate that we have a group of physicians in Cheyenne who are willing to sacrifice some of their office time to meet with the legislators and explain our ideas. But they are quick to tell us how much more effective a visit from a local physician constituent is.

If we are to preserve our heritage of free enterprise in all things as well as the practice of medicine, it is going to take more effort and time and money from us all. I think the rewards are worth the effort. May I close with some words from a song from the Sing-Out Group that is spreading their "Up With People" philosophy around the nation—"You must pay the price, you must sacrifice — Freedom isn't Free." Thank you. •

Denver Physician Returns From Service Aboard U.S.S. Hope

A Denver, Colorado, physician, James B. Dumm, M.D., has returned from service in Project HOPE's medical teaching-treatment mission to Cartagena, Colombia., He worked for two months as a volunteer aboard the floating medical center S. S. HOPE.

Since the floating medical center S. S. HOPE's arrival in Cartagena in February, 1,250 operations have been performed, 19,500 patients have been treated, and 117,045 immunizations against diphtheria, tetanus, and smallpox have been administered.

Educational exchange programs, instruction, and training have been conducted with the participation of 199 Colombian physicians, interns, and medical students; 65 Colombian dentists, dental students, and dental assistants; 101 Colombian nurses, auxiliaries, and nursing students; and 173 Colombian medical technicians, dietitians, and pharmacists. By the time the ship returns to the United States in December, Project HOPE training programs will have reached more than 600 Colombian medical personnel.

Colombia is the seventh nation visited by the S. S. HOPE. Since her initial voyage in 1960, the ship has anchored in Indonesia, Vietnam, Peru, Ecuador, Guinea, and Nicaragua. In seven voyages, Project HOPE's dedicated staff of American doctors, nurses, and technicians has performed more than 9,000 operations, treated over 100,000 patients, and immunized more then one million.

Project HOPE is the principal activity of The People-to-People Health Foundation, Inc., an independent, non-profit organization supported by the American public.

Transvenous pacemaker control of heart block*

W. Gerald Rainer, MD, James P. Newby, MD, Marvin S. Liggett, MD, and Fred W. Schoonmaker, MD, Denver

Experience with permanent implantable pacemaker without thoracotomy.

One of the common disorders of cardiac rhythm is heart block. Since the advent of electrical control of cardiac rhythm applicable to patients with this symptomatic disorder,[1,2,3] a variety of pacemaking units and approaches to this problem have been described.[4] Initially, thoracotomy was required for complete implantation of the battery unit and the myocardial electrodes.[5] Because most of the patients requiring surgical treatment of complete heart block fall into the older age groups, thoracotomy has imposed a significant surgical morbidity and mortality. Currently the use of a permanent implantable pacemaker unit using transvenous endocardial stimulation provides surgical treatment for complete heart block without the use of thoracotomy.

Our experience with 12 cases of permanent transvenous pacing provides the basis for this report.

Clinical material

Since July, 1966, 12 patients have undergone treatment of complete heart block by use of transvenous endocardiac electrode pacemakers. Included in the group are seven males and five females, with an age range of 52-83 (average age 69.6 years). Five of these patients were treated initially with transvenous pacemaker implantation; the other seven underwent this procedure subsequent to other pacemaker implantation. There has been no operative or hospital mortality and morbidity has been low. To date there have been no infections around pacemakers or electrodes. Re-positioning of the transvenous electrode catheter was necessary in three patients, and this was accomplished without difficulty. Because thoracotomy has not been required, hospitalization has been considerably shortened and patients have returned to normal activity at an early date.

Clinical notes

Indications: All patients with symptomatic complete heart block should be considered potential candidates for permanent pacemaker control of cardiac rhythm. Symptoms are those associated with low cardiac output and include Adams-Stokes attacks, exertional dyspnea and refractory congestive heart failure. The use of temporary transvenous pacing may be sufficient for those patients exhibiting transient heart block following myocardial infarction, who show an early return to regular sinus rhythm with an adequate ventricular rate. For this particular problem a temporary transvenous bipolar electrode catheter is connected to an external power source and pacing is continued only during the period of abnormally low ventricular rate.

For patients with permanent complete heart block, a unit consisting of totally implantable power source and transvenous electrode catheter is utilized (Fig. 1). There is little controversy at present concerning the indications for permanent pacemaker implantation in those patients with complete heart block whose symptoms can be shown to be due to their low ventricular rate. The use of a permanent pacemaker in cases exhibiting severe sinus bradycardia or variable heart block is still not clearly defined. Many of this latter group may be more precisely defined by determining the clinical, electrocardiographic and cardiac output response to a brief period of temporary pacing.

*From the Departments of Thoracic and Cardiovascular Surgery and Cardiology, Denver Clinic and St. Joseph Hospital, Denver.

Surgical features: In contradistinction to direct myocardial electrode fixation requiring thoracotomy, transvenous electrode pacemaker implantation involves only small cervical and pectoral incisions (Fig. 2). The endocardial electrode may be passed through either the external or internal jugular vein and is positioned fluoroscopically so that the tip of the electrode catheter is wedged securely into the trabeculae of the right ventricle (Fig. 3). Although a brief general anesthetic is usually employed, the entire procedure may be accomplished simply under local anesthesia in poor risk patients. Once the catheter electrode is adequately positioned, it is securely fixed to the vein at its point of entrance and the power unit placed either subcutaneously or subpectorally into a previously developed pocket.

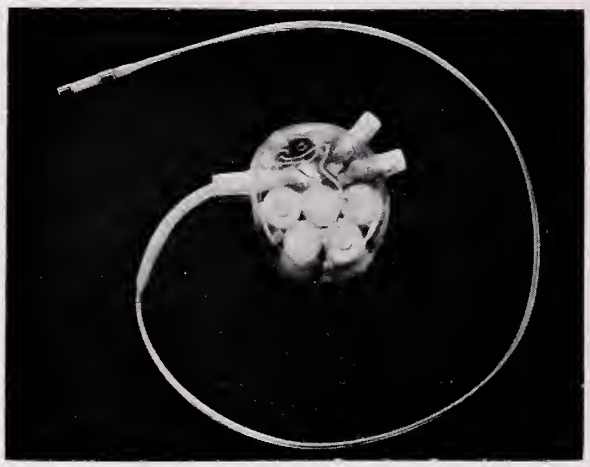

Fig. 1. Implantable pacemaker unit with transvenous electrode catheter attached. The electrode catheter consists of two flexible wires connecting to the two metal bands shown at tip of catheter and is covered with silicone rubber. (Medtronic Model 5870-C Pacemaker with Catheter—Medtronic, Inc., Minneapolis, Minn.)

Considerable care must be taken to assure stable positioning of the electrode catheter, and this is determined best by adequate capture of cardiac rhythm with a low milliamperage output (usually less than 2.5 ma). Occasional myocardial perforations or dislodgments have been reported,[6,7,8] but these have not led to permanent problems since re-positioning to a more secure location usually can be accomplished without undue difficulty.

Fig. 2. Photograph of patient with implanted transvenous pacemaker. Arrows point to cervical and pectoral incisions. Slight prominence in left pectoral region shows site of implanted battery unit.

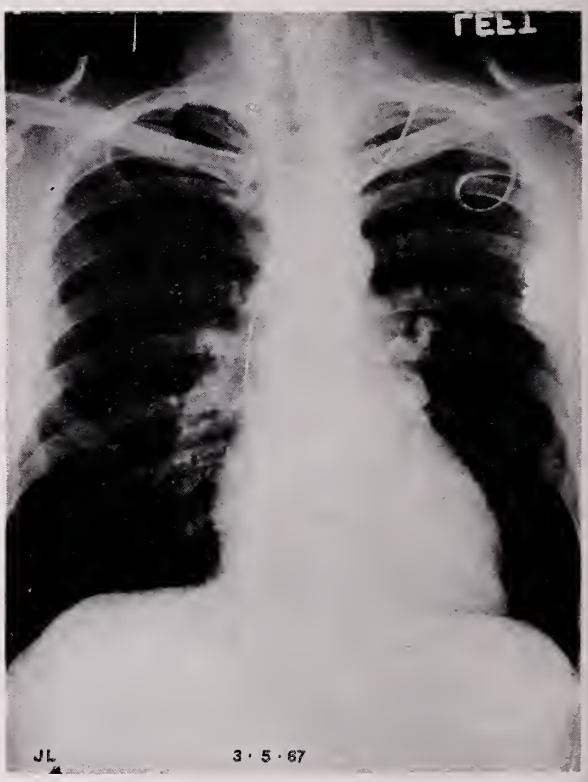

Fig. 3. Chest roentgenogram of patient shown in Fig. 2, showing implanted power unit and position of electrode wire in right ventricle.

Follow-up observations: Frequent determination of the cardiac rate is a meaningful self-observation in any patient with an implanted pacemaker. The patient is instructed to count his pulse rate for one full minute daily and to report any significant (±5/min.)

change in rate. Short strips of electrocardiograms are obtained monthly for comparison with previous rates. Since impending battery exhaustion is almost always heralded by a change in rate 4-6 weeks in advance, simple replacement of the battery unit can be performed decisively and electively prior to danger from return to complete heart block. It is extremely important that rate change not be ignored, even briefly, as uncontrolled rapid ventricular rates may be induced by a pacemaker unit with faulty timing mechanism.

Discussion

Certainly the use of a permanent indwelling transvenous pacemaker is cause for some concern because of the possible development of thrombi which may result in repeated pulmonary embolization. Although this has been reported, the incidence is surprisingly low and is probably related to use of silicone rubber-coated electrode wires in a high flow system. Long-term implantation studies have shown that the right ventricular endocardium covers the tip of the implanted catheter with a smooth, fibrous, endocardium-like lining, helping to maintain a permanent, secure fixation. Generally anticoagulants are not recommended, and these have not been used with any of our patients.

Although pacemakers of many and varied principles including unipolar and bipolar systems, fixed rate or "demand" circuitry or remote (radio-frequency) control have been utilized clinically and are still under active investigation, at the present time the completely implantable pacemaker utilizing a transvenous endocardiac electrode permits treatment of complete heart block with minimal risk, especially in older patients.

Summary

The application of a transvenous pacemaker system which can be employed without thoracotomy has been described. Our experience over a one-year period with 12 patients treated with such a transvenous unit has been presented. •

ACKNOWLEDGMENTS

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Myringostomy--
the eustachian tube substitute

David Murphy, MD, Denver

PLACEMENT of a small plastic tube through a myringotomy incision has come into frequent use in recent years. A term coming into usage describing this procedure is myringostomy. The origin of this word is easily determined by comparison with the words that describe permanent surgical openings in other organs. Gastrostomy and colostomy are procedures of creating an opening between the external body surface and the stomach and colon respectively. The suffix -stomy is the commingling form of the Greek word, stoma, which means mouth or opening.

The terms gastrotomy and colotomy, spelled without the "s" in the suffix, refer to procedures of making an incision in the respective organs. In these cases, the suffix -tomy is derived from the Greek word, temnein, which means to cut. In medical terminology, the suffix -stomy has been used when the incision has been made into a relatively permanent opening.

Myringotomy refers to an incision in the ear drum. Myringo- is the combining form of the Latin word for tympanic membrane. Cutting or lancing the membrane is a procedure of long usage. The modification of making the incision a more permanent opening is of more recent origin. In applying the medical terms to differentiate simple incision from the surgical aperature, it is logical to name the making of a more permanent opening in the ear drum a myringostomy.

At Children's Hospital and most operating suites caring for children, myringostomy is frequently employed. The occurrence of serous or mucoid secretions in the middle ears of children is more frequent since the advent of penicillin. Presumably antibiotic therapy controls the infectious aspect of acute otitis media, but the remaining sterile fluid is not absorbed nor does it drain out the Eustachian tube. A myringotomy with aspiration of fluid from the middle ear may be sufficient to resolve the "plumbing" problem. However it is unlikely that all the fluid in the tympanic cavity can be aspirated from all the recesses. In the more persistent case of secretory otitis, the incision of the myringotomy may heal before the middle ear disease is resolved. The fluid in the ear persists.

Placing a small plastic tube through a myringotomy prevents the incison from closing before the opening has served its purpose. Its purpose is primarily to ventilate the middle ear. If the mucosa of the Eustachian tube is edematous enough to obliterate the lumen, no air can get into the middle ear. A vacuum is formed from the resorption of air by the mucosa of the closed middle ear space. The resulting negative pressure may cause further edema of the mucosa with increased secretions to replace the vacuum. The myringotomy interrupts this cycle. When air can enter the middle ear through the myringotomy, the vacuum is eliminated. The edema of the middle ear mucosa secondary to the negative pressure will then resolve. As the swelling of the Eustachian tube subsides, the residual fluid in the middle ear can be pulled down the tube by the cilia of its respiratory type mucosa. When fluid no longer fills the Eustachian tube, ventilation of the ear can occur again through the normal route.

Not until the Eustachian tube has regained its essential function of ventilating the tympanic cavity can the myringostomy be allowed to close, which is accomplished by simply removing the tube. Most ear drum incisions close rapidly. The tube is needed in the myringotomy to interfere with the great propensity of most ear drums to heal.

In treating ear disease, either the drum shows undaunted capacity to heal even before Eustachian tube function has returned or the drum shows little or no tendency to close a perforation. The rate of healing of a perforated or incised ear drum is of basic importance to the recovery of the ear. Either too rapid or too slow healing of the ear may be disadvantageous.

The ear drum like other bodily tissues tends to extrude foreign objects. Flares and flanges of various designs have been put on the tubes to prevent them from sliding out of the incision. A collar button type tube may stay in place for many months.

The myringostomy substitutes for the Eustachian tube. There is no more direct bypass of a blocked Eustachian tube to atmospheric air than an incision in the ear drum. The myringostomy can serve both primary functions of the Eustachian tube, namely the egress of secretion and ventilation of the tympanic cavity. But like the natural tube, the artificial tube cannot serve both functions well simultaneously. Air cannot be coming into the middle ear through a myringostomy with ease if fluids are pouring out of the tube.

Intubation of an incision of an acutely infected ear drum may reduce the need for repeat myringotomies. However, the purulent exudate in the middle ear may force the tube out of the incision. During the acute phase of an otitis media, the need for ventilation is less, because the middle ear space is being refilled with exudate. When the production of exudate decreases, then ventilation becomes increasingly essential to assure an air containing chamber behind the ear drum. The drum cannot vibrate freely if dampened by fluid in the middle ear space, thereby impairing the hearing.

A simple myringotomy without intubation for an acute otitis media stays open well while pus is discharging through the incision. But when the purulent exudate is no longer under pressure to force the incision open, the myringotomy may close, when ventilation is most needed for the healing ear. When the infection is controlled the myringotomy may heal before ventilation is established through the Eustachian tube. Then myringostomy is needed until the persistent non-infectious fluid has cleared.

At the time of myringostomy for the chronic secretions of the middle ear, enough serous or mucoid fluid should be aspirated in order that the residual secretion will not drain out the small myringostomy tube. This fluid may remain in the lumen of the tube and the slit of space around the tube, thereby occluding the myringostomy. At the time of repeat myringostomy, the secretions may not be forming as actively, and be less likely to occlude the myringostomy.

If the Eustachian tube does not regain its function of draining and ventilating the middle ear, the myringostomy must continue to substitute for the natural tube. If the Eustachian tube is permanently stenosed, the alternatives to a myringostomy are retraction of the ear drum or secretion from the mucosa into the unventilated middle ear space. A retraction pocket of the ear drum may form a cholesteotoma, which is physically destructive. Retained middle ear secretions cause hearing loss, which can be socially destructive and perilous.

The Audiology and Speech Pathology Department of Children's Hospital is helping a multitude of children with ear disease, not only in diagnosis but also in therapeutic rehabilitation. Frequently special testing technics are required accurately to assess the audiometric status of a youngster. This Department at Children's Hospital is equipped, staffed and prepared to help you in evaluation of your young patient's audiologic ability. Allow the little children to have their hearing checked before writing them off as slow, dull, or uncooperative. The child may simply not be able to hear. In conductive hearing loss of middle ear disease a child as young as one to two years of age may be accurately tested. A myringotomy or myringostomy may make the difference between a child committed to a school for the retarded and a child who can hear words and learns to speak. This one to two millimeter operation has made that difference. •

The use of PAS for regional medical programs

Eric Leighton*, Denver

This paper is aimed directly at Directors of Regional Medical Programs, but the content will also be of interest to hospital administrators and to those physicians who are following the development of Regional Medical Programs.

MOST OF THE REGIONAL MEDICAL PROGRAMS getting underway across the country anticipate some form of data-gathering. In these programs, any researcher worth his salt should covet the quantity of health data potentially available from hospital medical records. To the extent they are aware of the data-hungry researcher, hospital administrators in turn should be feeling some apprehension, for their institutions are already besieged with questionnaires from a multitude of agencies. If this data source is to be tapped, it needs to be done in some fashion that does not add to the burden.

Fortunately, there exists a medical record information system that not only yields large quantities of data painlessly, but actually improves efficiency in the hospital's medical record library. This is the Professional Activity Study (PAS), a program now serving more than 1,000 hospitals in the United States and Canada, hospitals which account for more than 25 per cent of all the short-term general hospital beds in the two countries. The purpose of this monograph is to describe PAS and show how it can be used by regional medical programs.

How PAS works

Fig. 1 is a schematic diagram of data flow in the PAS system. Information is abstracted from the chart of every hospital discharge by clerks in the hospital's medical record department. The work invested in abstracting is balanced by work saved at the other end of the system, since the hospital's inpatient statistics and medical record indexes are compiled by the computer rather than by hand.

Looking at PAS as a data-gathering system, the following features stand out:

1. The system carries a good deal of information (see the PAS Case Abstract illustrated in Fig. 2) about *every* hospitalization, not just a sample.

2. The system operates continuously, not on a one-shot basis.

3. The system makes a direct payoff to the people who are feeding it. Those doing the data-recording are the same ones who receive the immediate benefits of the system, so it is in their own interest to be accurate and complete.

4. The system results in a data bank, permanently maintained on magnetic tapes. Data from more than 25,000,000 hospitalizations are now on file, and the bank is growing at a rate exceeding 8,000,000 case abstracts per year.

PAS is an excellent data-gathering system for regional research and planning precisely because it was not designed to be good for the researcher, but rather to be good for the hospital. And the fact that several hundred hospitals are voluntarily paying 30 cents per patient to participate in PAS indicates that it *is* valuable to the hospital. The capability for painless data-gathering can be considered a fortuitous byproduct (but a "fortuitous" byproduct carefully designed in the system.)

Why PAS works

Anyone with experience in data-gathering and data processing should be skeptical of the simplicity of the schematic diagram shown in Fig. 1. Too much of the real world is left

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out. This skepticism would be well-founded, as would be attested to by the people who operate PAS, the Commission on Professional and Hospital Activities (CPHA).

CPHA is a nonprofit research group located in Ann Arbor, Michigan, and PAS is its major concern. The CPHA staff includes statisticians, computer programmers, systems analysts, registered record librarians, and physicians, and these are some of their activities that make PAS work:

1. Training medical records personnel in abstracting, submitting corrections, and other mechanics of the system.

2. Checking the coding of diagnoses and operations, responding to coding questions.

3. Checking case abstracts for omissions, inconsistencies, and questions about proper recording.

4. Reviewing statistics from participating hospitals as a further check for possible recording problems.

5. Conducting two-day Tutorial Sessions to teach administrators, physicians, and medical record librarians how to use PAS reports.

6. Providing special tabulations and interhospital comparisons upon request, at no extra charge.

7. Continually refining the data processing capabilities, adding new options for hospitals.

8. Periodically updating the whole PAS program (improvements were made throughout the system in 1965 and 1966, at a cost of approximately $200,000).

It is not the magic of a computer system but this backup of training, data control, and education that has kept PAS viable and thriving.

PAS as a data-gathering system

For the researcher not on the CPHA staff, the most essential prerequisite for pulling data out of PAS is cooperation between the researcher, the hospitals, and CPHA. In particular, the researcher must have from each hospital administrator written authorization to use the data before CPHA will be in a position to cooperate. Also, first priority in

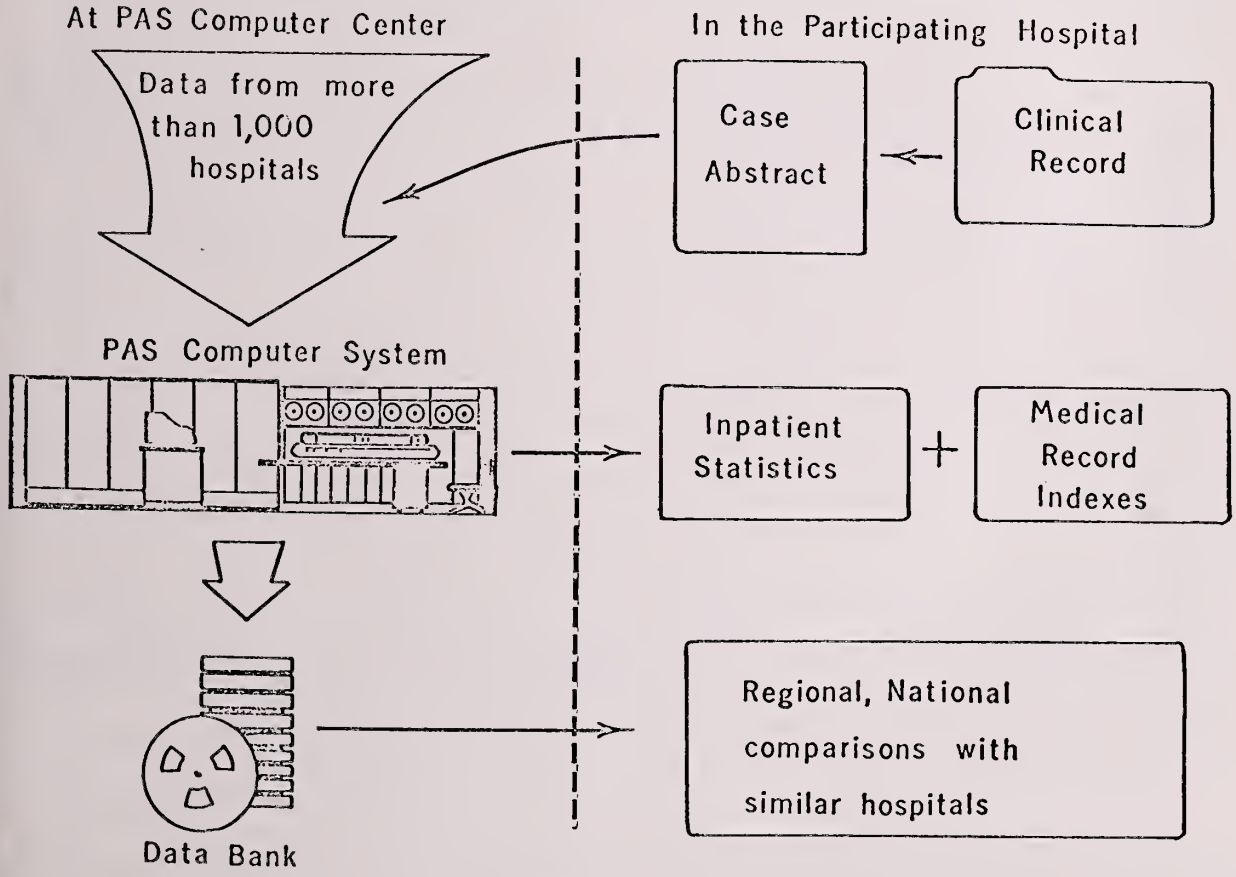

Fig. 1. Flow of data in PAS.

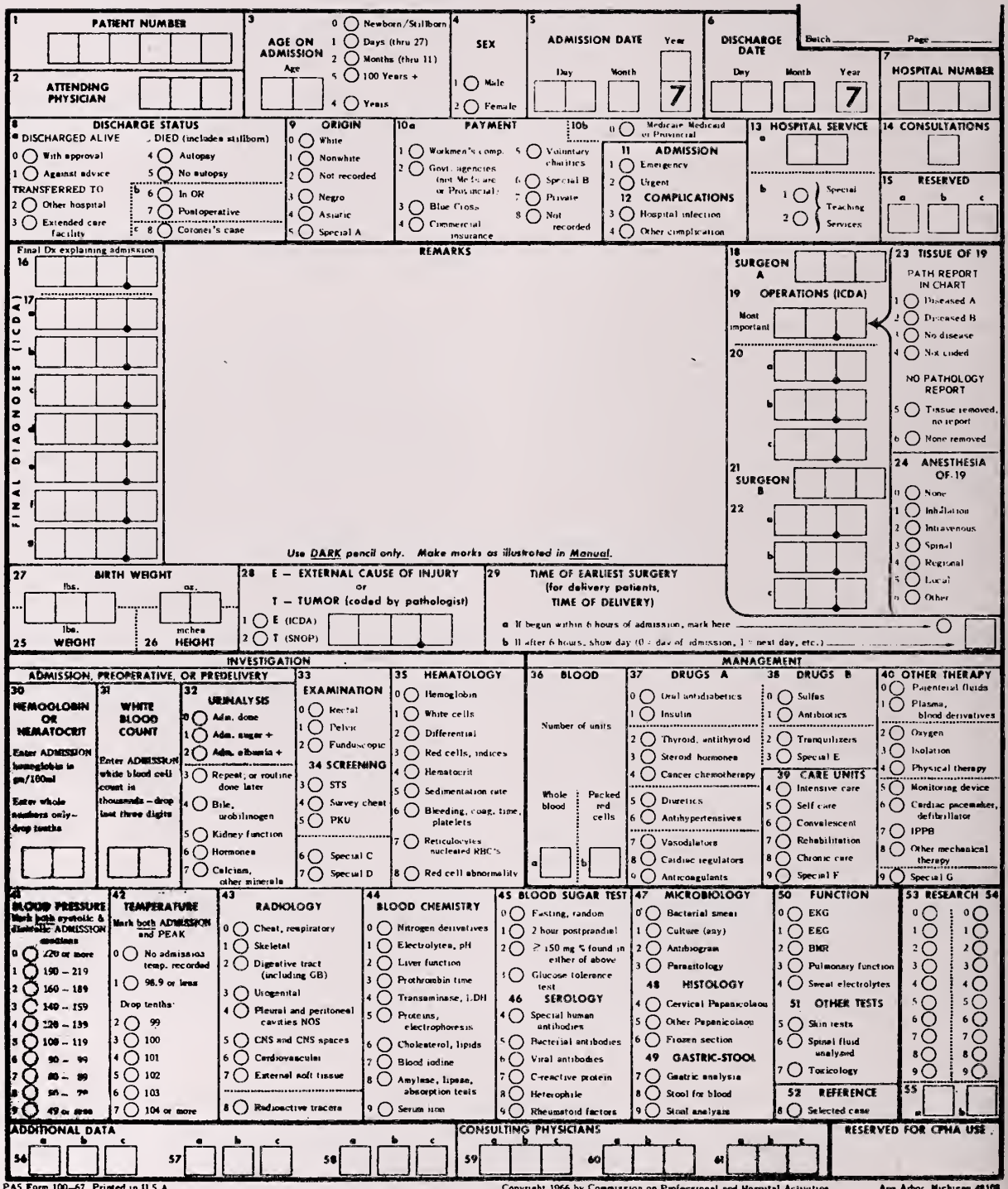

Fig. 2. PAS case abstract, completed for every discharged patient.

the use of CPHA manpower and computer time is quite properly assigned to commitments to individual hospitals, so there are practical limitations to the availability of these resources to other researchers. Within these practical constraints, the researcher will find CPHA extremely helpful in planning the use of PAS data.

One way to get data out of PAS is simply to go into the medical record departments of the hospitals and transfer information from the computer-printed PAS reports. A more convenient (and probably cheaper) method would be to have extra copies of these reports prepared by CPHA, to be sent to the regional medical program office. Extra copies mean extra cost, but relative to the amount of data obtainable the cost is very small.

The next level of complexity would be to have CPHA periodically split data off onto a special magnetic tape file and send these tapes to the regional medical program. Again, the cost involved would be relatively small. The decision between data on paper and data on magnetic tape will probably rest on the local availability of computers and programmers. The exact costs involved and such technical problems as compatibility of data processing equipment (or lack of it) really cannot be delineated here, since they depend on factors that are changing from day to day. These are matters that need to be settled between the regional medical program and CPHA.

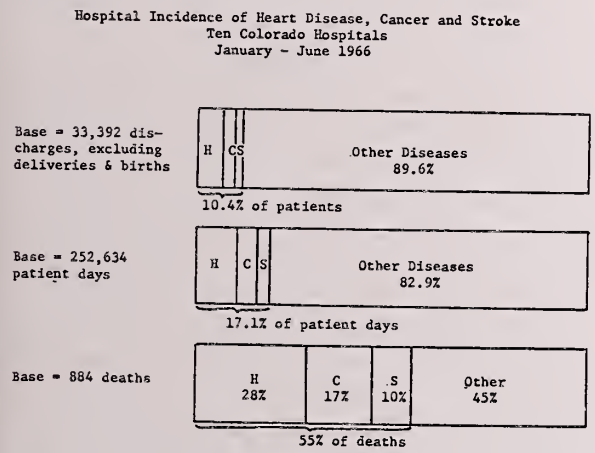

Fig. 3. A simple example of basic data available through PAS. Patients were classified according to the final diagnosis explaining admission. The statistics shown here were compiled in a few minutes from copies of one of the standard PAS semiannual reports, the B report.

Patients Hospitalized for Heart Disease
Death Rates in Ten Colorado Hospitals
January-June 1966

Hospital	No. of heart disease patients	Percent who died
*A	341	6.7%
*B	97	9.3%
*C	347	10.4%
D	389	12.6%
E	65	13.8%
F	155	15.5%
G	71	15.5%
*H	101	17.8%
I	233	19.3%
J	107	19.6%
Total	1,906	12.9%

*These hospitals have intensive care units.

Fig. 4a. An example of an interhospital comparison, using the same source as Fig. 3, the semiannual PAS B Report for each hospital.

Hospital group	No. of heart disease patients	Percent who died
Four hospitals with ICU	886	9.7%
Six hospitals without ICU	1,020	15.6%
Total	1,906	12.9%

Fig. 4b. The same data as used in Fig. 4a, grouped to contrast hospitals with intensive care units with hospitals without them. PAS data could be used to make the comparison much more to the point, by standardizing for patient age distribution, specific type of heart disease, proportion of patients with complicating diagnoses, etc.

Use of PAS to Plan Continuing Education

One of the problems of continuing medical education is discovering topics that are relevant to practice in a given area. With PAS it is possible to identify aspects of care where there appear to be weaknesses and tailor the education efforts accordingly.

For example, refer to Fig. 4a, where ten hospitals are compared with respect to death rates for heart disease patients. The three

hospitals with lowest death rates (A, B, and C) all have intensive care units. But there is one other hospital with an intensive care unit, Hospital H, and this hospital has a substantially higher death rate than the first three. Further analysis of PAS data could reveal more surely whether this is due to a real difference in care rather than to factors beyond the hospital's control. The data might well indicate need for an educational program about the use of the ICU.

Since PAS is continuous, it can also be used to test the effectiveness of an educational program. In the present example, one could tell whether a drop in death rate occurred after disseminating information about the use of the ICU.

PAS as a teaching machine

Continuing medical education is usually considered a process of transmitting information from centers of knowledge to practitioners. One would expect, however, that practice itself would be educational. That is, medical practice can be educational if information about patient care can be recorded and organized for periodic review. PAS can be a kind of teaching machine, because it feeds back to physicians a picture of their own practice. PAS not only presents abstracts of individual cases but also gives a perspective about groups of cases. When the information presented by PAS is taken together with standards for good quality care—standards agreed on by a hospital's medical staff—practicing physicians can assess for themselves the quality of their care.

This "teaching machine" use of PAS is nothing that happens automatically. A medical staff needs to overcome its prejudice against working on review committees (which was a tedious business with old-fashioned methods of chart review) and invest some time in learning to use the computer-printed reports of PAS. In many PAS hospitals this never happens, simply because of the inertia of the established way of doing things. CPHA offers two-day Tutorial Sessions approximately once every two weeks, to teach hospital staffs how to use PAS. These sessions are very successful, but because of distance (Tutorial Sessions are currently held only in Ann Arbor) and limited capacity, the CPHA program needs to be augmented by local efforts.

This is where the regional medical program comes in. In fact, it is probably more important to the goals of the regional medical program to help physicians learn how to use PAS to review their own practice than it is to use PAS for data-gathering. After all, the general goal of RMPs is to improve the quality of care; planning facilities and feeding knowledge to practitioners is one line of attack, but a more immediate way to improve care is by helping physicians see whether they are practicing as well as they already know how to, with the facilities already on hand.

PAS as a prototype

PAS is old-fashioned. Data is recorded with an ordinary pencil on ordinary paper. Long-distance data transmission is accomplished by U. S. mail. The participating hospital does not have so much as a new teletype to display to visitors.

It is inevitable that as regional medical programs progress with exploration of information systems, there will be a great deal of discussion about on-line, time-sharing, integrated computer networks. How does PAS relate to aspirations for such sophisticated systems? Like this:

1. PAS is available right now. It is a way of getting "on the air" quickly, thus freeing systems analysts from pressures for instant data and giving them elbow room in which to experiment.

2. PAS sets high standards. Although the PAS system is old-fashioned from a data processing standpoint, it delivers a great deal of information at low cost. Any system that supersedes PAS will need to be demonstrably better, and this should be a safeguard against elaborate alternative systems that are heavy on style (and cost) but light on content.

3. PAS can teach hospital personnel about information systems. For most hospitals, PAS represents a big step forward from really out-of-date information handling technics. As PAS is used, doctors and administrators learn something about the value of information and this is a most important piece of education, since the time is undoubtedly coming when hospitals and physicians must weigh the cost

of data processing facilities against the cost of equipment more directly related to patient care. Also, it is probable that the medical staff committee that has learned to use PAS reports will be more amenable to interacting with a computer's cathode ray tube than will a group still digging half-heartedly through piles of charts.

4. PAS can teach systems theorists about the real world in which any medical record information system, however fancy, must work. Working with PAS can demonstrate problems of motivating busy physicians to be complete and current in their charting, of helping medical record librarians asume their emerging role as information retrieval specialists, of overcoming anxiety about "computer-controlled" practice, etc. These are the human problems that lie behind the flow charts.

Even if a regional medical program is not planning for some data processing network that would supersede PAS, PAS should still be considered a prototype. This is because PAS does not cover all the types of information that will be needed by the RMP. For example, PAS is not suited for a cancer registry, PAS does not cover outpatient records, PAS does not contain fiscal data, and PAS cannot be used for clinics or doctors' offices. But PAS *is* a good foundation for information systems in some of these areas. CPHA has experimented with a cancer registry system, and to some extent with an outpatient system, but considerable development is still required. This is an area in which an RMP research group could work closely with CPHA to develop some greatly needed systems to supplement PAS.

Summary

The purpose here has been to commend PAS to regional medical programs, with at least enough cogency that RMP personnel will want more information about PAS. These are the points we tried to make:

1. PAS is a data-gathering system that is cheap, immediately and readily available, and painless to hospitals.

2. PAS can be used to plan and test programs of continuing education.

3. When properly used, PAS can help physicians maintain high quality care.

4. PAS is a good working prototype for more sophisticated and/or more comprehensive information systems. •

For more details about the Professional Activity Study, write to:
Vergil N. Slee, MD, Director, Commission on Professional and Hospital Activities, First National Building, Ann Arbor, Michigan 48108.

The doctor and the adolescent

Seymour E. Wheelock, MD,* Denver

WHAT CONTRIBUTION does the general pediatrician make these days to his patients' efforts to achieve personality stability in the often tortuous climb to young adulthood?

In order to practice "comprehensive pediatrics" the pediatrician must have had to learn to recognize all emotional problems of the child. He should be able to manage the eight out of ten of these patients who have developmental and behavioral problems which are superficial and involve faulty training or surface conflicts without internalization. "He should also understand the dynamics of family interaction, learn to intervene effectively in crises, and be alert to the psychological aspects of child care."[1]

So he must—but does he?

Of course, there are other highly significant determinants in the child's progress to adulthood, but it must be accepted that the pediatrician stands brightly revealed in the cold spotlight of shared responsibility for the satisfactory prosecution of a difficult transition.

It is not easy to measure all aspects of personality stability but one of the ways to do so has resulted in some revealing statistics. For many young adults the first confrontation with a sudden demand for independent action in the first steps away from home, parental support, and strong dependency ties is entrance to college. How do the young people of today handle this contingency? It would appear that one answer from a significant study of six successive classes of male students in a four-year liberal arts college of excellent reputation is that some do it well, some don't—and the latter are increasing in number as the academic years roll by.

The Minnesota Multiphasic Personality Inventory was administered to all individuals in each of six successive classes of entering freshmen at the college. The results were used to distribute all students into three groups: those unimpaired emotionally, those moderately impaired emotionally, and those seriously impaired. There were 2.5 times as many emotionally impaired students in the class of 1967 (16.1 per cent) as in the class of 1962 (6.9 per cent). A mean prevalence rate of approximately 12 per cent of clinically significantly impaired students for the six years compares favorably to two less well documented, but similar studies.

Incidently it was found that the prevalence of emotional impairment went up as the academic potential of the classes increased—and the scholastic aptitude test scores for '67 were 70 points higher than those for the class of '62. Impairment was more common among those with higher verbal abilities and often made it difficult for these individuals to perform well.

The careers of these men were followed and the number of visits by members of the classes to the psychiatrists of the college health service tabulated. It was the statistical impression of the IBM machine, and more importantly, the college psychiatrist, that there was a sharp increase in the number of severely disturbed patients in the six years covered by the research.

In short the following hypotheses[2] were validated:

1. The proportion of emotionally disturbed students in successive classes has been increasing.

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2. Students who are identified as emotionally impaired will be more likely than others to withdraw from the college.

3. Students who are emotionally impaired will be more likely than others to seek or to be referred for psychiatric help.

Pediatricians, therefore, must be aware that the pressures for academic excellence and gross intellectual product exerted on developing personalities may distort the sequences that favor appropriate identity consolidation and the formation of mature, resistant, and flexible emotional patterns. The pediatrician in his role as family counselor should reassure and encourage the parents of his patients to be aware that there is renewed need and hope, even in these times, for the well-balanced and well-rounded young person who can combine academic excellence of reasonable degree with the other virtues that make student life *living* rather than years spent in an ivy-covered squirrel cage of unhappiness and personal frustration. •

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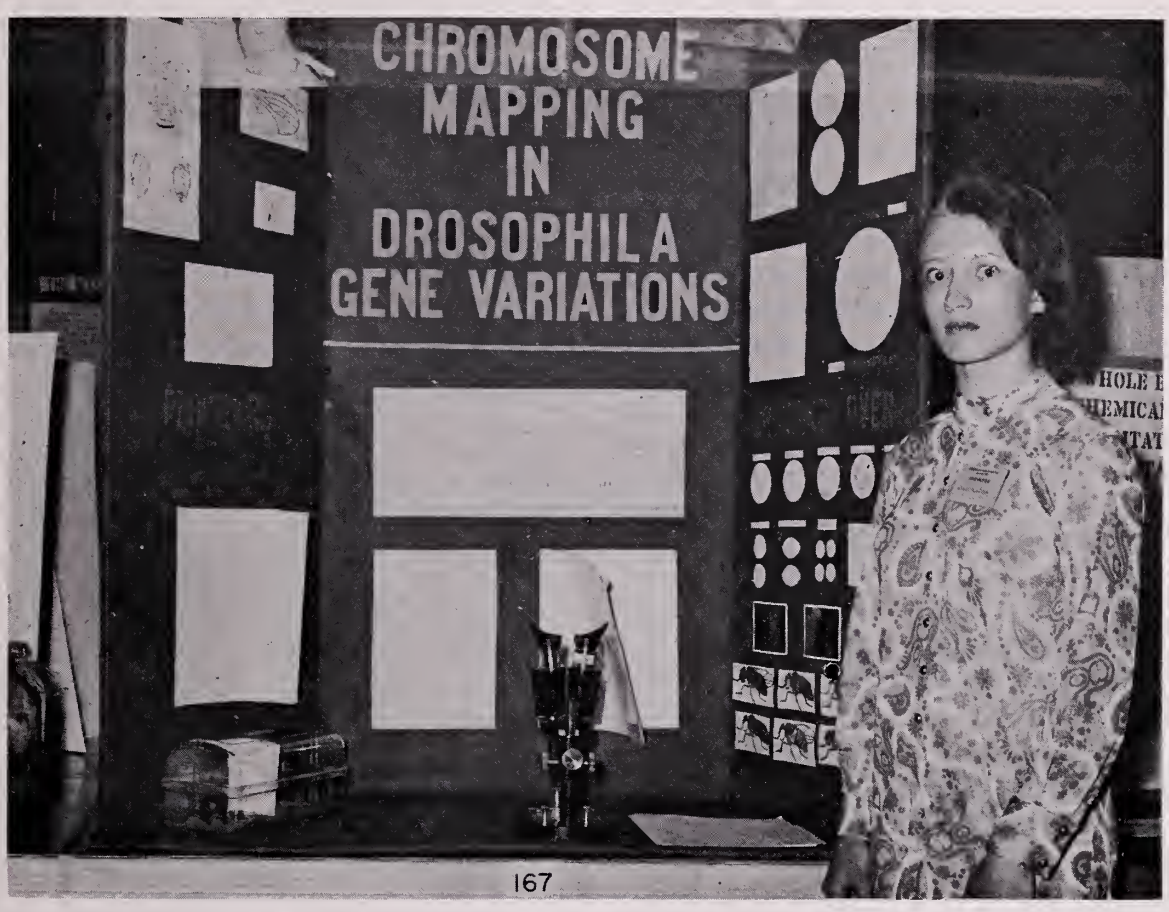
12th Annual Colorado-Wyoming B i-State Science Fair Award Winner



Diana Glazier, a ninth grader from Wiggins, Colorado, won the Colorado Medical Socety's award for outstanding presentation at the 1967 Colorado-Wyoming Bi-State Science Fair of her exhibit on Chromosome Mapping in Drosophila Gene Variations. As part of her award from the medical society she and her mother were guests of the Colorado Medical Society during its annual meeting at the Broadmoor Hotel, September 20-23, where her exhibit was put on display.

The treatment of open fractures*

Fred C. Reynolds, MD, St. Louis, Missouri

THE AIM OF THE PHYSICIAN in treatment of fractures is to restore the injured part or parts to normal function at the earliest possible time with the least risk to the patient. In open fractures, he should convert them to closed fractures as early as possible, again with the least risk to the patient. Treatment of an open fracture, therefore, is treatment of the wound. It matters not how beautifully the fracture may be reduced and maintained if the wound becomes infected as a result of inadequate care. For the result then at best is destruction of bone, loss of position and delayed or non-union of the fracture; at worst, loss of life or limb.

The open fracture seldom presents itself as a separate leg or arm but when this does occur it is accompanied by a greviously wounded patient. Care of an open fracture or fractures cannot be separated from care of the patient. The condition of the patient either from disease or associated injuries may force alteration in fracture management but rarely in wound therapy.

The immediate problem is resuscitation and maintenance of vital functions. Once an airway is functioning, hemorrhage is controlled, and shock is being combated, sterile dressing should be applied to the wounds and the extremity immobilized. Antibiotics and tetanus immunization are started at this time and when replacement therapy is well on its way the patient should be under control and the physician should have a good working diagnosis.

Once resuscitation is accomplished, each physician who manages trauma must ask himself a searching question. It is whether the physician and other members of the staff are competent to care for all the patient's problems and can this care be accomplished in that institution? If the answer is no, then the patient should immediately be transferred to the nearest facility so prepared. Under no circumstances should wounds be closed while waiting transfer and there is no need to submit the patient to the trauma of x-ray. I cannot emphasize this point too much, for it is one of the major reasons for poor results in trauma management. All too frequently therapy is begun, wounds are closed without thorough cleaning, or when they should be left open. Considerable effort and time is devoted to fracture reduction and then the next or following days for some reason or another it is deemed advisable to send the patient to another hospital. Be honest with the patient and yourself and decide what is best for him. If it is going to be necessary to transfer him elsewhere, do it at once.

The factors that determine success or failure of wound treatment are: (1) the virulence of the organism contaminating the wound; (2) the number of these organisms; (3) the length of time they remain in the wound; (4) the health of the tissue contaminated; (5) the resistance of the host.

The physician has no control over the number of organisms that get into the wound at the time of injury. He can decrease the number of organisms that subsequently get into the wound by immediate application of sterile dressing and protection of the wound while the extremity is being prepared for wound surgery. Early administration of antibiotics will tend to lessen virulence. Although I am not aware of definite experimental evidence that indicates that organisms remain as contaminants for six hours and then suddenly begin to grow, from a clinical standpoint at least it seems that there is about this much grace period, but this is not always true. So that the earlier debridement is done the better the chances of a clean wound. With the possible exception of small puncture wounds and wounds caused by low velocity

* Presented at meeting of Wyoming State Medical Society and 14th Rocky Mountain Medical Conference, August 31. 1967. The author is Professor of Orthopedic Surgery, Washington University School of Medicine, St. Louis, Mo.

missiles, all open fracture wounds must have a debridement. There is no substitution for good wound surgery. For it is this treatment that reduces the number of organisms, shortens the time they remain in the wound and is a vital factor in determining the health of the tissue contaminated. The fifth factor, the resistance of the host, is augmented by blood replacement, antibiotics and diet.

Let's look at the wound itself. With the initial cellular damage there are released into the wound probably as by-products of the injured cell, leukotoxins, necrosin, thyroxin, and perhaps a leukopenic factor. In all probability, these substances promote the invasion of the damaged area by leukocytes, plasma cells, and mast cells, and may contribute to the destruction of damaged but not entirely killed cells. A hematoma forms, is clotted with a fine meshwork of interwoven fibrin strands. In the first twenty-four hours there accumulates in the wound material with the staining properties of an acid mucopolysaccharide which is water soluble and contains hexosamine. It is likely that this material is derived from plasma glycoprotein. Dunphy found that hexosamine increases rapidly in the wounds appearing as early as six hours post wounding and usually reaches a peak after about forty-eight hours, returning to normal on the eighth or ninth day. Between sixteen and thirty-six hours, there is a proliferation of mesenchymal cells and fibroblast, and by the third day there is active invasion of the clot by fibroblasts which are followed by vascular buds so that slowly the clot is organized into a highly vascular network. In the first twenty-four hours the pH of the hematoma may drop quite low, in the neighborhood of 5.6 which is likely due to a decreased oxygen tension and the damaged cells. Inorganic phosphorus levels are increased within the first twenty-four hours and there usually is a second rise at the end of the first week. Alkaline phosphatase in wound fluid remains about the same as in the blood for the first week and then gradually rises. There is increased sulphur uptake by the fibroblasts, apparently to form sulphated polysaccharides and after about three weeks this tagged sulphur shifts to an extra-cellular position. Somewhere between the fourth and the sixth day, evidence of collagen formation is apparent with the appearance of hydroxyproline and this rapidly increases to a peak about the twelfth day. It is assumed that this same type of reaction takes place in wounds which are associated with fracture. But so far as I know, no one has made a study of of wound healing when a fracture is also present.

Wound fluid in the first week has a lower concentration of sodium, potassium, calcium and phosphorus, than in the plasma. Early in the wound period the protein is also less. The chlorides remain about equal to the plasma concentration. Alkaline phosphatase moves from cells to matrix during the healing and it has been suggested that the energy required for differentiation in cellular acitvity in the repair of a wound is by way of the Krebs cycle. In those wounds which are associated with a fracture, by somewhere around the eighth to the fourteenth day, the mesenchymal cells which have been actively proliferating to repair the injury differentiate into osteoblasts and chondroblasts with the early production of cartilage and osteoid and several days later the osteoid matrix begins to be calcified.

The operation described as debridement has changed but little since it was described by Hugo of Lucca about 1200 B.C., and I quote from Whipple, "In the first place the sides of the wound should be debrided or abraded, and then the wound should be completely cleansed of fuzz, hair, or anything else, and let be wiped dry with lint moistened with warm wine."

During the preparation and draping of the surrounding skin, the wound is protected after which it is thoroughly irrigated, hopefully from within out. Except in the hand where it is so important to identify all structures, debridement is best done without a tourniquet as I find it easier to determine viability of tissue. In certain instances it may be advisable to use a tourniquet to prevent excess blood loss, but if used, complete hemostasis is accomplished at the end of the procedure by removing the compression before final dressing. Then the margins of the skin and all dead and devitalized structures are

excised continuing to extend the wound usually in a longitudinal direction until the most remote recess is thoroughly opened and in clear view. All foreign substances within the wound are removed. When the wound is thoroughly open it is again irrigated with Ringer's or saline, again removing strands of tissue floated up by the irrigating solution. After the teaching of Dr. J. Albert Key, I have used a sulfa crystal in the irrigating solution, at first sulfanilimide and when manufacture of this was discontinued, sulfathiazole crystals. I like to see a sparkling bed of these crystals in the wound at the end of debridement for I am sure it also helps to combat infection.

When the wound is thoroughly explored and revised, attention should turn to the bone. Small pieces of bone completely detached from soft tissue should be removed. However, large detached fragments even if contaminated are best cleaned and replaced in most instances.

At this stage the physician knows the extent of soft tissue and bone damage and has a pretty good idea of the wound health. Damaged major vessels should be repaired; in certain instances this is mandatory. Where major artery repair has been accomplished internal fixation of the fracture offers a better chance for function and healing of the vessels. The vessels should be covered by soft tissue (muscle) if possible, but there is no other contraindication to packing the wound open.

Nerve repair is probably not advisable but may be loosely brought together to facilitate future exposure and repair. Major tendons in certain instances may be repaired but for the most part soft tissue structures are best treated by delayed repair.

What to do with the bone? I stated that the treatment of open fractures is the treatment of the wound so that it could early be converted to a closed fracture. The fracture, therefore, is not important and should not be treated except, (1) as mentioned above when major vessels have been repaired; and (2) where there is extensive soft tissue loss associated with a very unstable fracture, such as, both bones of the leg and both bones of the forearm. In this situation secondary procedures, perhaps several will be required to close the wound and stability of the fracture facilitates wound management. In all other situations the fracture usually can be controlled either by traction or external fixation and the bone should not be fixed. If internal fixation is indicated intramedullary fixations should be employed if possible, for the more foreign bodies left in the wound the greater the chance of wound infection.

What should be done with the wound? An occasional case will be seen early in which it appears that a careful and complete debridement has been done leaving healthy tissue and in which it is possible to bring the wound edges together without tension and obliterating dead spaces. In such a patient it may be permissible to close the wound but even here perhaps over continuing suction. In all other situations the wound should not be closed but packed open. In fact, it is far safer to pack all wounds open, for it does no harm and if clean may then be closed in five days by delayed suture or appropriate skin grafts or flaps.

I have found that fine mesh gauze saturated wtih glycerine is best for the wound pack as this affords good drainage, does not macerate the tissue, and one may remove it and apply a skin graft without first wet dressing the wound.

Once the wound is closed and healed without infection, then in about four weeks internal fixation may be used if indicated. •

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Male infertility*

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A study of the effect of prostatic massage on seminal viscosity and the use of dornase in liquefaction of viscid seminal fluid.

FUNDAMENTALLY, the object of examining the male partner in an infertile marriage is to determine whether spermatozoa of adequate numbers and quality are produced and delivered so that fertilization of the ovum may reasonably be expected to occur. When a couple realizes that conception should already have taken place, the wife is usually the one who seeks help. It is at this point that the husband should be called in for evaluation. His routine examination consists of procedures which are neither painful nor complicated. The findings should be helpful to the gynecologist in assessing the couple's infertility problem. Although an infertile marriage may be due entirely to a fault or defect of one of the partners, minor disturbances in both the husband and wife frequently add up to an infertile marriage.

The report from the urologist to the gynecologist, as Charny[1] has concisely stated, ought reasonably to contain information leading to one of the following conclusions about the husband:

"1. He is fertile, potent, and not responsible for his wife's failure to conceive.

2. He has moderately reduced fertility and may be responsible.

3. He has severely depressed fertility; he is either entirely responsible for, or at least contributing to the childlessness of the marriage.

4. He is sterile. Pregnancy will not occur unless he can be successfully treated."

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Routine study of the man should include: a medical history, physical examination, minimal routine laboratory studies consisting of blood count, urinalysis, serology, and at least two seminal fluid examinations. Additional special procedures involving thyroid function, F.S.H. and 17-Keto-Steroid determinations, chromosome studies, testicular biopsies, and immunologic studies may be necessary for evaluation of some patients.

History

The history includes a general medical survey and stresses factors known to affect fertility. We send a "fertility questionnaire" to the man, which he completes and mails back to us. It is reviewed before the patient comes for examination. Questions include history of past illnesses, high fevers, congenital defects, habits as to alcohol and tobacco, diet, medications, physical activity and sexual practices. During the interview we also learn whether the patient wears loose or tight-fitting shorts. His occupation may be a contributing factor and the history should include queries concerning exposure to toxic agents, undue stresses, and high temperatures; whether travel is involved, and if so, how much time the patient spends at home; and whether the time of ovulation might frequently be missed.

Urologic review includes urinary habits, history of any urinary obstruction, infections and swellings. History of urethral discharge, specific or non-specific, will indicate whether further investigation should be made to determine if there is chronic infection of the urethra or its adnexae. Epididymitis is especially important because it often results in ductal obstruction. History of pain and swelling of the testicle from any cause, such as injury, surgery, or torsion of the spermatic cord is noted. Mumps after puberty, with orchitis, is a well known cause for atrophic

testicular changes. If there was cryptorchidism, did the testicle descend spontaneously or was operation performed, and at what age?

The patient's sexual habits are reviewed; difficulty with erection or ejaculation is inquired about. Extra-marital conceptions also may give a clue as to potential fertility. If the man was previously married, was there a pregnancy? If the first wife has remarried, has she had a conception? In the present marriage, what is the frequency of coitus? How long has it been since contraceptives were discontinued? Artificial coital lubricants, such as surgical jelly, petroleum jelly or even contraceptive creams are sometimes unwittingly the cause of sperm immobilization.

Physical examination

In the physical examination, search is made for any condition which might adversely affect fertility. The state of nutrition is noted; if the patient is obese, is the adiposity general or is it mainly in the hips and thighs and is the prepubic fat pad unusually thick to suggest an endocrine disorder? Are the breasts of normal color and size? Focal infections, such as oral sepsis, are noted and treatment is recommended if infection is found.

Examination of the genitalia should be detailed. The urethral meatus is inspected for position and size. The testicles are palpated for position, size, and consistency; this is probably the most important part of the physical examination. Changes in size and consistency of the testicles will often indicate what may be expected in the seminal fluid studies. The normal testicle is fairly firm while the one with atrophic or hypoplastic changes is often mushy or diminished in consistency. Firm, non-tender enlargement of the epididymis, especially at the tail, indicates previous inflammation and possible obstruction. The scrotal vas is easily palpated; increase in diameter may be evidence of inflammation. Congenital absence of the vasa occasionally occurs and will explain absence of sperm in the seminal fluid in these cases.

During the past decade the detrimental effect of varicocele and hydrocele on spermatogenesis, due to interference with temperature regulation, has been stressed. Hanley[2] found that correction of these conditions was frequently followed by improved fertility. Charny[3] believes, on the basis of available studies, that men who have varicocele and impaired fertility should be encouraged to have varicocelectomy.

The prostate and seminal vesicles are palpated and the expressed secretions are examined microscopically, preferably more than once, to determine if there is inflammation. I usually delay this portion of the examination until after semen studies have been completed; the rationale for this will be given later.

Examination of semen

The most critical part of the study is the examination of seminal fluid. Although the procedure requires only simple apparatus available in any laboratory, erroneous conclusions are easily made because of faulty collection or handling of the specimen. Semen may be obtained by masturbation or by coitus and withdrawal with ejaculation into a (sterile) wide-mouthed jar. A three to five-day period since the last ejaculation is requested. If a portion is accidentally lost in collection, it should be noted, since the first 40 per cent of the ejaculate contains about 75 per cent of the spermatozoa.[4]

Condoms should not ordinarily be used because they impair sperm motility. When, because of religion, a condom is necessary the plastic one with a pin-point perforation may be prescribed. We request that the specimen be collected in the morning and delivered to the office within two to three hours. During the summer months special precautions are taken to prevent exposure of the semen to high ambient temperatures. At least two specimens are examined; if the findings do not agree within reasonable limits, more specimens are requested.

Estimation of quality of semen is based on a number of factors including volume, sperm concentration, motility and survival of sperm, viscosity of the semen, and sperm morphology; leucocytes and immature sperm forms are noted. Average normal seminal fluid volume ranges from 2.5 to 6.0 ml. Turbidity is dependent on cellular content; the watery pale clear specimen will contain few or no sperm. Motility of sperm is expressed

in terms of percentage of actively motile cells and the quality of the motility. Seventy per cent or more actively motile sperm should be present in the fresh ejaculate. Specimens kept at room temperature will show gradual decline in quality and percentage of motile sperm. Usually some motile sperm are still present 24 hours after collection. Rapid loss of motility sometimes occurs and is probably significant. Sperm counts are ordinarily done using the white blood cell pipette and hemocytometer counting chamber, and are reported as number of sperm per ml.

When in the course of many examinations it is found that conception occurs with relatively low sperm counts in some patients, while in other cases high concentrations seem necessary, the question naturally arises about the tenability of our former criteria regarding the necessity of high sperm counts for "fertility." I am no longer certain what number constitutes a "fertile" sperm concentration. However, a sperm count of more than 80 million per ml. associated with good motility, normal viscosity and morphology, would represent an ideal specimen. These findings indicate excellent fertility potential and are reassuring to the examiner. Meaker[5] in his book stated that "In our experience, no pregnancy has occurred in cases where the sperm count was below 60,000,000." Since then numerous workers have reported that although this level is encouraging to the examiner, pregnancies have not infrequently occurred with much lower sperm counts. In 1940 Meaker[6] classified men as being of good, intermediate and poor fertility, based mainly, but not entirely, upon the quality of the semen. He stated: "To merit the rating of good, a specimen must have a sperm count above 60,000,000 per cc, a motility of at least 70 per cent, and not more than 20 per cent of abnormal forms according to the method of my urologic associate. An intermediate specimen presents one or more of the following features: a sperm count below 60,000,000 but above 20,000,000; a motility of less than 70 per cent but more than 20 per cent; and between 20 and 30 per cent of abnormal forms. If a specimen falls short of minimum intermediate requirements in any one of the respects, number, motility, or morphology, it is rated as poor." Based on this classification a group of 218 men with follow-up information on whom I did fertility studies, were categorized in 1951 as follows:[7] good fertility 120, intermediate 38, poor 37. An additional 23 in whom no sperm were found in repeated ejaculates were classified as sterile. The incidence of pregnancies in this group is shown in Table 1.

Table 1

FOLLOW-UP STUDIES SHOWING INCIDENCE OF PREGNANCIES ACCORDING TO FERTILITY CLASSIFICATION OF HUSBAND

FERTILITY CLASSIFICATION AND INCIDENCE OF PREGNANCIES

FERTILITY CLASSIFICATION	NUMBER OF PATIENTS	PREGNANCIES	
		NUMBER	PERCENT
1 - GOOD*	120	61	50.8
2 - INTERMEDIATE†	38	18	47.4
3 - POOR†	37	10	27.0
4 - STERILE	23	0	0
TOTAL	218	89	40.6

* Statistically significantly different from groups 3 and 4

† Statistically significantly different from group 4

Hotchkiss[8] in a report of semen analyses of two hundred fertile men found that sperm counts ranged from 2,225,000 to 544,000,000, with the average being 120,630,000 sperm per ml. One-fourth of the cases had sperm counts less than 60,000,000 per ml. In 1951 MacLeod and Gold[9] reported that "the sharp difference" between fertile and "infertile" cases was at sperm count levels under 50 million per cc and real infertility begins below the 20 million per cc level.

In 1953 MacLeod and Gold[10] stressed the factor of quality of sperm motility. They found no suggestion of a relationship between ease of conception and counts over the 20 million level, but there was a relationship between motility and ease of conception. Also, good quality of motility was suggested as compensating for low sperm counts. In more recent studies MacLeod[11] stated, "I would still consider that true oligospermia is represented in counts under 20 million per ml and that at the latter level, provided the sperm

motility is good, the chance of conception occurring is reasonably good."

Observations on the effect of seminal plasma on quality of sperm motility have been made by various workers. Rozin[12] found that seminal plasma has a definite influence on sperm motility; seminal plasma of normal semen added to sperm with poor motility from oligospermic men resulted in improved motility. Conversely, seminal plasma from oligospermic men reduced the motility of spermatozoa in normal semen. We may infer that there is an enhancing factor in seminal plasma from fertile men and an inhibitory factor in seminal plasma of infertile males.

Moench and Holt[13] in studies of sperm morphology concluded that the fertile male always has less than 20 per cent abnormal sperm heads; when abnormal heads are in the 20 to 23 per cent range impaired fertility is assumed, and with more than 25 per cent abnormal sperm heads, "clinical sterility" usually occurs.

Seminal viscosity

Freshly ejaculated semen promptly becomes gel-like with interspersed particles. Within about 15 minutes, semen normally becomes fluid and will drop freely from a pipette; mucolysis results in liquefaction. Rarely the gel-like state persists, but not infrequently, instead of becoming liquid, the specimen becomes thick, viscous and stringy (Fig. 1). This state of increased viscosity may persist or liquefaction of varying degrees may occur in the next several hours.

My interest in seminal viscosity was stimulated several years ago when two men whose wives were reported to show no sperm in repeated post-coital examinations were seen at about the same time at my office. The ejaculates of both men had excellent sperm concentrations and were always thick and viscous. It was assumed that the viscid semen was lost from the vagina when the wife assumed the upright position after coitus. When semen does not liquefy, the thick viscid mucus may act as a barrier to sperm progression. The sperm motility is often impaired, although apparently not always. Frequently the tails are seen actively lashing back and forth but there is little progressive motion of the sperm. The high viscosity

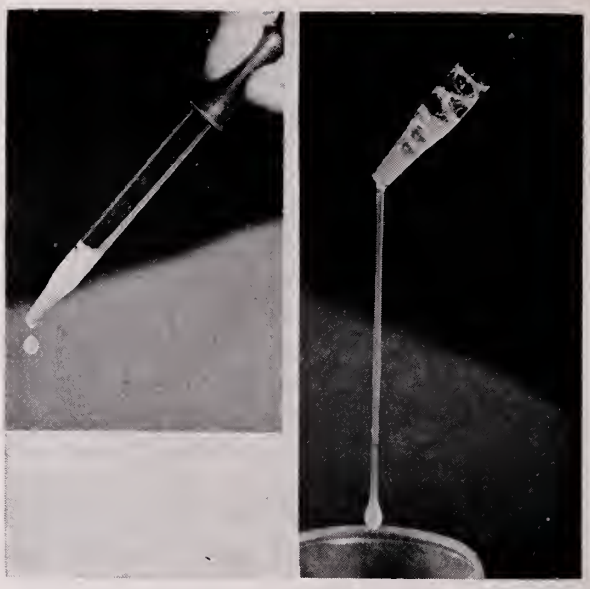

Fig. 1. Viscous semen. Note normal semen on left drops from pipette while viscid semen on right strings out.

makes it difficult or even impossible to draw up the semen accurately in a blood-counting pipette.

Huggins and Neal[14] found that semen contains fibrinolysin, a proteolytic enzyme derived from the prostate, which liquefies semen and also digests clotted blood and fibrin. von Kaulla and Shettles[15] reported that in addition to fibrinolytic enzymes, human semen contains antifibrinolysin and other enzymes.

Effect of prostatic massage on seminal viscosity

It had been my practice for many years to examine prostatic secretion during the first visit of the patient. I would now like to report data which influenced me to postpone expression of prostatic fluid until after the necessary semen specimens for evaluation of the patient had been obtained. In 40 consecutive patients we found that in 14 (35 per cent), both semen specimens collected *after* the prostatic massage showed increased viscosity, while in 144 consecutive patients where two specimens were collected *before* prostatic massage, 15 (10.4 per cent) showed increased viscosity (Table 2). This suggested that prostatic massage might affect the viscosity of the next one or several ejaculates.

Table 2
EFFECT OF PROSTATIC MASSAGE ON SEMINAL VISCOSITY

	Number of PATIENTS	Seminal Specimens with INCREASED VISCOSITY	
		Number	Per cent
Two specimens of semen collected before prostatic massage	144	15	10.4
Two specimens of semen collected after prostatic massage	40	14	35.0

Several methods for liquefaction of highly viscous semen have been reported. Bunge and Sherman[16] found that when alpha amylase in Locke's solution was added to non-liquefied human semen, the specimen usually liquefied within 20 minutes without immobilizing the sperm. They suggested the possibility of adding the enzyme to viscous semen and using the treated seminal specimen for insemination or employing the enzyme alone for postcoital vaginal insertion.

Amelar[17] has reported two methods to reduce increased seminal viscosity. He employed a mechanical procedure in which the semen was forced several times through a Luer syringe attached to an 18 gauge needle. The same author used a mucolytic detergent, Alevaire,* to liquefy viscous semen. He also suggested that this agent be used to reduce viscosity of the ejaculate for artificial insemination.

Observations on liquefaction of seminal mucus

Various enzymatic agents have been used in recent years to liquefy tenacious secretions and viscous exudates. We became interested in an enzyme preparation derived from beef pancreas, pancreatic dornase (Dornavac**). It contains deoxyribonuclease which depolymerizes nucleoproteins. Deoxyribonucleoprotein is one of the principal constituents of viscous exudates. Since pancreatic dornase has been used clinically with favorable results to liquefy viscous secretions and purulent exudates,[18, 19] we experimented with this material, in laboratory studies, to thin out highly viscid seminal specimens.

We collected 42 highly viscous seminal specimens from 28 patients. When after 3 to 6 hours, liquefaction had not occurred spontaneously, each specimen was divided into two samples. A small sample was kept as a control. To the larger sample, 100,000 units of pancreatic dornase was added. Pancreatic dornase is supplied as a lyophilized powder in a sterile vial of 100,000 units. The powder dissolved rapidly with gentle agitation. We added it undiluted so as not to alter the sperm count by dilution. Periodic observations were made on the control and treated aliquots of semen specimens for as long as 11 hours at ambient temperature (22° to 25° C).

It was observed that 38 of the 42 specimens did liquefy after adding pancreatic dornase. This represents 90 per cent of the total specimens (Table 3). A definite majority of the specimens liquefied within one-half to three hours after the addition of the enzyme. Following liquefaction, the semen could easily be drawn up into a blood counting pipette and the sperm count more accurately done. The untreated control portions of ejaculate were not notably liquefied by the time the enzyme was observed to have produced its greatest effect.

Not only were the specimens with dornase notably improved in regard to liquefaction, but sperm motility was also estimated to be improved in 25 instances, representing almost 60 per cent of the cases (Table 3). Improvement in sperm motility could be attributed to decreased resistance offered by the liquefied seminal plasma as compared with the viscid material. Also sperm survival (percentage

Table 3
EFFECT OF PANCREATIC DORNASE ON LIQUEFACTION OF SEMEN; ON MOTILITY AND SURVIVAL OF SPERM

	Viscid Specimens Studied	Effect of Dornase	Per cent
Liquefaction	42	38 liquefied	90.0
Motility	42	25 improved	59.5
Survival	42	28 improved	67.0

*Alevaire®, Winthrop Laboratories, New York, N. Y.

**Dornavac®, Merck, Sharp and Dohme, West Point, Pa., supplied through the courtesy of Dr. R. T. Smith.

of motile sperm) 8 to 11 hours after collection was recorded as improved in 28 samples, representing 67 per cent of the specimens (Table 3).

As yet we do not know whether the mechanism of action of pancreatic dornase can be related to ribonuclease or if other enzyme systems are involved. Also, the possibility that more rapid lysis of seminal mucus might occur by using dornase dissolved in saline or buffered diluent has to be considered. Studies on these and other aspects of problems concerning viscosity of seminal fluid are in progress. Clearly, sperm survival and motility are affected by the viscidity of seminal plasma. We found that sperm concentration and seminal viscosity are not related; increased viscosity occurs with high or low sperm counts.

Discussion and summary

Evaluation of the fertility potential of the man in an infertile marriage should be done as soon as possible after the problem is presented to the physician. The study ordinarily is not complicated and is based on a medical history, physical examination and fairly simple laboratory procedures. Reasonably reliable determination of fertility potential should result from the study. In some cases additional, more complicated investigations may be necessary. The results of the examination of the male should be helpful to the gynecologist in evaluating the fertility potential of the couple.

One of the important aspects of the urologist's examination of the male concerns the characteristics of seminal plasma. In this respect, we have found that prostatic massage can result in increased viscosity of the subsequent ejaculates. The expression of prostatic secretion during fertility examinations should be delayed until after the seminal specimens have been collected.

Since highly viscous seminal plasma impairs sperm motility and survival, we have attempted to liquefy viscid seminal specimens. We have found that the addition of pancreatic dornase to semen of increased viscosity produced liquefaction in 90 per cent of the specimens, in 67 per cent sperm survival was improved, and in approximately 60 per cent sperm motility was improved. It is planned that dornase be tried clinically to overcome the factor of increased seminal viscosity by instilling dornase solution into the vagina precoitally or by adding it to viscid semen for cervical capping or artifical insemination. •

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Tuberculosis in a large office

Peter Dawson, MD, Theresa M. Overfield, RN, MPH; and Richard S. Bolten, MD, MPH*, Denver

This confirms danger of transmission of the disease by open cases and illustrates the use of isoniazid prophylaxis.

A 23-YEAR-OLD CLERK from the Denver regional center of a large firm entered Colorado General Hospital in October, 1966, with moderately-advanced pulmonary tuberculosis, with smear-positive, infectious sputum. His son was found to have active primary tuberculosis and was started on therapy. His wife's tuberculin test, at first negative, later converted to positive (15 mm PPD), and she was started on isoniazid prophylaxis.

Examination of several neighboring families yielded no cases.

The patient worked in a large office that was almost a single room. In examining the office personnel, the first step was to examine 75 people who worked closest to him. Nine (12 per cent) had positive tuberculin tests (more than 6 mm induration by Mantoux test).† X-rays of the nine did not yield any active cases. Four of them were started on INH prophylaxis, either because their history created a strong suspicion that they were recent converters (three cases), or because they appeared to have inactive TB with some risk of reactivation (1 case). Sputum was cultured from the latter person before prophylaxis was begun.

On the strength of these findings, and because the patient had spent a good deal of time walking throughout the office, the decision was made to tuberculin-test the entire plant. This was done in December. Eighty-eight per cent of the employees, or 841 persons out of 957, were tested (including the original 75). They were screened with the Heaf test. Those with a doubtful reaction were tested with PPD and OT.

Table 1
TUBERCULIN CONVERTERS IN THE OFFICE

Case No.	Age	Sex	Tuberculin reaction 2 weeks after contact was broken	Tuberculin reaction 3 months after contact was broken	Chest x-ray	Disposition
1	49	M	OT 14 mm		Normal	INH (had neg skin test 1957)
2	34	M	OT 11 mm		Hilar Calcifications	INH (close contact at work)
3	23	F	OT 17x31 mm		Normal	INH (close contact at work)
4	26	F	Tine neg.	PPD 13 mm	Normal	INH
5	21	F	Tine neg.	PPD 6 mm	Normal	INH (PPD 10 mm 4/6/67)
6	25	M	OT neg.	PPD 13 mm	Normal	INH
7	23	F	Tine neg.	PPD 23 mm	Normal	INH
8	29	M	Tine neg.	PPD 7 mm	Normal	INH (PPD 10 mm 4/6/67)
9	21	F	Neg.	Heaf 4+	Normal	INH
10	43	M	Tine neg.	Heaf 3+	Normal	INH (PPD 15 mm 4/6/67)
11	37	M	OT neg.	PPD 12 mm	Normal	INH

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†The State Health Department now recommends 10 mm induration to intermediate PPD as a positive tuberculin test.

In the plant as a whole, 24 per cent of those tested had positive reactions (more than 6 mm induration by Mantoux test). The reactors, plus 88 non-reactors who requested it, received chest x-rays. The x-rays were normal. The results of this testing were as expected for a normal population.

When the employees in the patient's department were re-tested in December, seven had apparently converted from negative skin tests to positive. (They had gone from negative tines to PPD's of 10 mm or more, except for one who had converted to a 4+ reaction to the Heaf test and was not re-tested.) The seven converters were started on INH prophylaxis, along with three persons with inactive tuberculosis.

The patient's tuberculosis, then, spread to 13 persons: one case, his son; his wife, who converted; and 11 probable converters at work. Isoniazid prophylaxis was given to all the converters, to prevent them from developing active disease. •

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Treatment of anxiety and depression

A double-blind study of a perphenazine and amitriptyline in combination

W. Grayburn Davis, MD, Denver

Uncertain relations of both physical and psychical influences confuse the etiology, manifestations, and management of many disorders confronting the clinician today. Among these shifting aspects of disease, none is more clearly ambiguous than the emotional disturbance combining anxiety and depression.

It is most understandable that clinicians, still unsure of the uses of the new psychotropic medications, should have felt especially uneasy about prescribing several drugs to treat a diverse emotional condition presented by a single patient. The rationale for administering tranquilizing agents to anxious patients with concomitant depression seemed highly questionable, at best, with respect both to efficacy and, particularly, to safety. Fears of this sort were introduced, with reversed emphases, with the advent of antidepressant drugs and the associated question of their use in depressed patients with concomitant anxiety. In recent years, however, as a result of increasing clinical studies of both types of psychotropic drugs, the literature has inclined to favor medication combining tranquilizers and antidepressants for treating disturbances that include anxiety and depression.

Antidepressant medication with amitriptyline has been found valuable in a number of clinical trials.[1-3] Likewise, the efficacy and safety of the phenothiazine tranquilizer, perphenazine, has long been recognized. A tablet combining these two agents, Etrafon®* has recently become available and appears to be valuable in treating physical disorders of various types and severities revolving around the depressive anxieties.

*Etrafon®, Schering Corporation, Union/Bloomfield, N. J.

The present study compared the effects of this combination (2 mg. perphenazine and 25 mg. amitriptyline) with those of amitriptyline alone, and of placebo, in management of anxiety and depression in patients not so severely disturbed as to require psychiatric referral. The emotional disturbances of most of these patients could be directly traceable to either a chronic illness or concomitant personal problem.

Materials and methods

For a double-blind, crossover evaluation of amitriptyline-perphenazine, amitriptyline alone, and a placebo, 48 subjects were selected on the basis of diagnosis of depression and anxiety. The 11 males and 37 females ranged from 27 to 80 years of age. The situational stress promoting emotional disturbance in these subjects involved physical illness or financial, social, or domestic problems. Physical disorders in 28 patients included asthma, peptic ulcer, cancer, pruritis, hypertension, eczema, arthritis, atopic dermatitis, and other afflictions. Other signs of disease included headaches in 11 patients, insomnia in 11 patients, hypochondriasis in 5, and hysteria in 4. One patient presented manic-depressive tendencies, another paranoid tendencies, and a third was schizophrenic.

Each subject received one of the two active medications for the initial six weeks of the study; this was followed by two weeks either of placebo medication or of no medication at all; for the final six weeks completing the study, each patient was then crossed over to medication with the other active drug. Identical capsules contained either 25 mg. amitriptyline; 25 mg. amitriptyline and 2 mg. perphenazine; or inert placebo. Dosages of

all medications ranged from two to four capsules per day. Similar capsules were used in order to keep the patient or physician from recognizing any of the compounds.

Evaluations of the improvements effected by each active drug were made on at least two occasions during each six weeks of active medication. On these occasions, laboratory and physical findings pertinent to side effects were duly recorded. At the end of the 14 weeks of study, a general preference among the medications was determined according to the relevant findings in each case.

Results and discussion

Final evaluation of responses to the different medications showed that the combination of perphenazine and amitriptyline controlled emotional disturbance best in 32 subjects (66.6 per cent); amitriptyline alone was favored in 7 cases (14.6 per cent); and no medication appeared superior, for any of various reasons, in 9 cases (18.8 per cent). No subject favored placebo. The 9 subjects with no preference among medications included 3 who could not tolerate either of the active drugs, alleging adverse reactions, 3 who were too anxious or fearful to complete the active-treatment trials, and 3 who could distinguish no advantage between the active drugs' effects.

Aside from the direct effects on primary depression and anxiety, the greater frequency of improvement with the combined agent can be attributed largely to the drug's general superiority in relieving headaches and insomnia, which prevailed among large numbers of the present subject group. It might be noted, for example, that two patients habitually requiring large amounts of codeine for headache experienced appreciable reductions in this need during therapy with Etrafon. The finding of notable efficacy in relieving insomnia has been reported by previous investigators concerned with the drug's use in general practice.[4, 5]

Of the seven subjects reported to favor medication with amitriptyline alone, it should be remarked that emotional disturbance in three cases was diagnosed in association with cancerous organic disease. This suggests a tendency of the antidepressant medication

alone to be more appropriate in such a disturbance.

Medication apparently effected considerable relief of the symptoms of asthma in nine paitents receiving Etrafon and in two on amitriptyline. Combined-drug treatment also appreciably reduced the severity of dermatitis in three patients and reduced the frequency of hyperventilation and/or tachycardia in two others. No remarkable relief of these or other involved physical disorders was obtained with amitriptyline alone.

On the basis of the present findings, it may be asserted that medication combining perphenazine and amitriptyline secures greater therapeutic response among patients with anxiety and depression than does amitriptyline alone. This impression accords with such previous findings as those of Diamond.[6] Also in accord with previous findings is the ability found in this study to maintain therapeutic response while reducing the required dosage of Etrafon. Three patients with favorable responses to one capsule b.i.d., and four to one capsule t.i.d., were reduced to one capsule at bedtime while maintaining superior effects of treatment; two other subjects reduced effective dosages to one capsule b.i.d.

No serious side effects resulted from medication in the present study: no blood abnormalities, no significant urinary value changes, no liver function disturbances, etc. The most common side effects reported were drowsiness, occurring in 14 patients on Etrafon and 8 on amitriptyline; dry mouth, in 9 on Etrafon and 2 on amitriptyline; and dizziness, in 4 on Etrafon and 1 on amitriptyline. Alleged side effects casued one patient to discontinue medication with amitriptyline; two to discontinue Etrafon; and three to stop all medication. It is of interest, in this connection, that two subjects discontinued medication because of alleged side effects from both the active and inert medications. Accordingly, an appreciable degree of interference from somatization and other factors related to emotional disorder must be read into the overall record of "side effects" in the present study.

The common occurrence of drowsiness in

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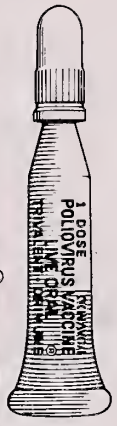

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this study agrees with a similar finding in a previous report by Ernst.[7] Another side effect noted with some frequency among subjects receiving Etrafon was weight gain; Cook has reported[8] his impression that this effect is a function of the patients' improved moods. This opinion is shared by the present investigator, who, moreover, ruled out the possibility of related edema through testing electrolytes and using diuretic agents.

Summary

A double-blind and crossover procedure was employed in a study comparing the effects of Etrafon, amitriptyline, and placebo in 48 subjects with anxiety and depression arising from situational stress. Final evaluation demonstrated a preference for Etrafon in 32 patients (66.6 per cent), and for amitriptyline in 7 (14.6 per cent). In 9 patients, no drug appeared clearly superior to the others.

The combined agent tested was particularly effective in relieving insomnia and headaches. Dosage of Etrafon could be reduced to below effective levels of amitriptyline, while maintaining therapeutic responses, in 9 patients (18.7 per cent).

No serious side effects occurred as a result of medication. Some drowsiness and dryness of mouth were reported in both active-treatment groups.

It is concluded that combination therapy with Etrafon can be expected to relieve anxiety and depression arising from situational stress, with greater effectiveness than amitriptyline alone, and generally with a valuable consistency and relatively low toxicity.

Moreover, the compound is particularly valuable when one realizes that more often than not when the psychical problem is relieved, the accompanying physical dysfunction (gastrointestinal complaints, hypertensive states, etc.), real or imagined, is also relieved. Treating the psychiatric condition may well serve as a preventive measure for a future organic chronic state. As Goldman[9] noted at a recent symposium on the emotional basis of illness, certain stress "reactions require adequate management with both psychotherapeutic support and medication to relieve symptoms which, without medication, could persist and become chronic." •

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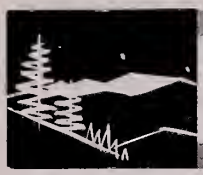

COLORADO

Administration of the Outpatient "Problem-Drinking" Treatment Program of the Emory John Brady Hospital, Colorado Springs, Colorado

During the past 16 years, at this hospital, a system for the administration of Antabuse (Disulfiram) to "problem drinkers" has evolved which has proven to be of considerable assistance in the management of the alcoholic or "problem drinking" patient.

After at least 18 hours of complete sobriety the patients are begun on an Antabuse dosage calculated to build up a prompt, protective blood level; i.e., four 0.5 gm. tablets the first day for an average size adult male, three tablets the second day, and three tablets each Tuesday and Friday for one month, then two tablets each Tuesday and Friday thereafter. The average adult female would receive three 0.5 gm. tablets the first day, two the second day and then two tablets each Tuesday and Friday thereafter. Patients are placed on this program from an outpatient status or are placed on the program while in the hospital recuperating from the effects of acute and chronic alcoholism. Hospital ground privileges are usually not granted until the patient has had a protective dosage of Antabuse.

Patients come from a number of sources, voluntary and involuntary; involuntary patients are those committed by the Court to this hospital and therefore to the program. Patients who have gotten into difficulty with the law because of criminal activities, i.e., bad-check writing (along with their alcohol problem), have had the program made a portion of their probationary agreement. Others are in varying degrees of voluntary and involuntary status; some coming alone because they have heard of the program, others coerced by family and friends or referred by Alcoholics Anonymous, the local Council on Alcoholism, their employer or commanding officer. In all cases a responsible person, if possible not a close relative, is selected by the patient, whom we may call if the patient fails to appear on the appointed day and date to take his Antabuse. In the case of the Court-ordered-involuntary patient this is an official of the Court concerned.

As previously stated the Antabuse is administered on an outpatient basis on Tuesday and Friday of each week during the hours of 10 to 11 in the morning or 6 to 7 in the evening. The Antabuse is given as a suspension in water. Antabuse tablets go into suspension in a medicine cup of water in about 10 minutes. The medication is administered either by the chief nurse or her assistant under her direct supervision. Every effort is made to see that the patient receives his medication as prescribed, hence the liquid form. On the day following each Antabuse day, the entire log of patients is reviewed to see if any patients failed to come in for their medication, and if so immediate efforts are made to contact either the patient or the informant named at the time he was started on the program. Inasmuch as the Antabuse has a cumulative and lasting (estimated 7-10 days) blood stream effect it can be clearly seen that in many cases the patient can be returned to the program before he has an opportunity to indulge in any excessive amount of alcohol.

In this respect local authorities have usually been cooperative; the District and Municipal Court, Sheriff's Office, Police Department and others have been helpful in bringing patients to us immediately before the patients could get further involved in their intemperance and do themselves further physical and social damage. It has been necessary, on occasion, to send a patient to the Colorado State Hospital for long-term care because of physical disability or emotional disorders beyond the scope of the outpatient program. These referrals, however, have been in a very small percentage of cases. Others have been lost to penal institutions for acts committed while drinking before they could be returned to medical care.

No physical illness was considered a contraindication to the drug administration. Provocative tests are no longer used, and attempts to drink have been extremely rare as each patient is told of the results of drinking while taking Antabuse. Patients are placed on the program after consultation with a staff psychiatrist, for which the usual charges are made. At the present time a maintenance charge equivalent to fifteen cents per tablet is made for the entire administration of the program which, of course, is not adequate to pay all the costs, except that it is helpful that these individuals must pay cash for their drug at the time they take it. There are, therefore, no billing or paper work complications. Welfare and other agencies are forbidden to pay for the drugs; the problem drinker must pay for them himself in cash. Thus the cost to the patient of control of his illness is but a tiny fraction of the cost of continuing it.

Statistics on this open-end type of project are very difficult to properly qualify; however, it may be safely said that in the vast majority of cases this program has been very effective and for protracted periods of time. In many instances it has been lifesaving and in others it has restored the individual to a productive capacity in the community and saved the family from economic disaster which protracted hospitalization or further illness would have brought. Interestingly, the strongest opposition to the involuntary program has been from spouses and mothers, who have attempted by many, sometimes ingenious, means to disrupt the program of enforced sobriety in their relative.

Where employment has been interrupted by alcoholism, the patient frequently becomes employable again within a short enough time that

his job is preserved and his employer is reassured. Instead of a protracted period of loss of earning power, plus often being a community expense, he suffers only a brief interruption, without loss of job and is soon again a contributing member of society rather than being a dependent.

During the first several years of the program there were numerous physical complaints alleged to be caused by the Antabuse therapy, but as the program has gotten more general acceptance among the general population, we have had less and less of this type of complaint until at the present time it is practically unheard of for a problem drinker to make any serious type of "somatic protest" against administration of the drug. Community physicians are sometimes deceived by continued complaints of skillfully manipulative patients. However, it has only been necessary to discontinue Antabuse in five patients, four for dermatoses, one for peripheral neuritis, of the hundreds thus far treated.

In general no other type of contact is maintained with the usual patient; no group, no individual or other type of formal psychotherapy is given. A physician, however, is readily available to the nurse administering the medication, and the fact that the patient is coming to the hospital twice weekly results in an informal medical follow-up, for the patient will usually, if only by chance, encounter his doctor every week or two. Formal consultation with his doctor can be readily arranged in the usual manner. All other types of psychopharmacological medications are discouraged except occasional phenothiazines. Potentially addictive drugs such as Meprobamates, Librium, Valium and barbiturates are avoided on the outpatient status. Participation in Alcoholics Anonymous is often suggested. Discrete psychotic or neurotic manifestations in these individuals, when they appear, are dealt with in the traditional manner.

In summary then, it may be said that it is felt that alcoholism (and the problem drinking leading to alcoholism) is an extremely serious public health problem. It is a serious and frequently fatal disease in the individual afflicted. The medical profession should take strong action where it can to ameliorate this disorder.

At the Emory John Brady Hospital a program has evolved which, while somewhat costly and occasionally difficult of administration, has proved to be effective in a vast majority of unselected cases. This has greatly reduced the necessity for protracted hospitalization or referral to the State Hospital. Its success has been reassuring to those who attempt to cope with this problem here in our community. Once again it must be pointed out that the success of the program has been dependent not only upon the vigilance of the medical staff of the hospital, but also upon the assistance of the local courts, police authorities, public and private social agencies, Alcoholics Anonymous and other interested lay groups.

Several members of the AAGP from the Western Slope areas met Monday, Oct. 2, at St. Mary's Hospital Conference Room. The meeting was called by Dr. Kenneth Prescott for the purpose of organizing a Western Slope Chapter of the Colorado AAGP. Dr. Val Wolhauer explained the mechanics of the organization's procedure. Dr. K. Prescott was elected President and Dr. Robert Bennett as President-elect.

* * * *

The Mesa County Medical Society and Auxiliary were entertained at a social hour at the Zeigel summer home, followed by dinner and a scientific meeting at the Vega Lodge. Dr. Hughs of the University was guest speaker. Ninety-five doctors and auxiliary members enjoyed nature's display of autumn colors and the entertainment and the meetings that followed.

Abstract of House of Delegates Proceedings Wyoming State Medical Society*

SIXTY-FOURTH ANNUAL MEETING
August 28, September 1, 1967
Jackson Lake Lodge,
Grand Teton National Park, Wyoming

FIRST MEETING
Monday, August 28, 1967

The Sixty-fourth Annual Meeting of the House of Delegates of the Wyoming State Medical Society was called to order at Jackson Lake Lodge, Grand Teton National Park, Wyoming, at 9:10 o'clock a.m. on Monday, August 28, 1967, by *President Ray K. Christensen,* who relinquished the gavel to *Dr. John H. Froyd, Speaker of the House of Delegates.*

Speaker Froyd called upon *Dr. Raymond E. Kunkel* for the report of the *Credentials Committee.* Dr. Kunkel called the roll. Dr. T. L. Johnston moved that Drs. T. L. Holman and Robert O. Brown (Natrona County), Dr. Bane T. Travis (Laramie County), and Dr. Walter R. Carey (Sheridan County) be seated as delegates. Dr. Goode R. Cheatham seconded the motion. Motion carried. Dr. Kunkel then announced that a quorum was present.

Dr. T. L. Johnston moved that the *minutes of the 1966 annual meeting of the House of Delegates* be approved as printed in the Delegate Packet. Seconded by Dr. John J. Corbett. The motion was carried and the minutes *approved.*

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*These minutes represent actions taken largely on material from the official packet of the Wyoming State Medical Society. This packet contains the reports that are representative of committee activities and recommendations and form an official part of these minutes.

It was moved by Dr. Harlan B. Anderson and seconded by Dr. Goode R. Cheatham that the *minutes of the preceding three Council Meetings* be *approved* as printed in the Packet. Motion carried.

The minutes of the *August 27, 1967, Council Meeting* were read by the Executive Secretary and in the absence of any discussion were ordered *approved* by the Speaker.

The minutes of the *Scholarship Loan Fund Committee* as printed in the Packet were considered. Dr. Duane M. Kline suggested the establishment of a fund to provide scholarships for families of physicians, in the event there is any money left over from the funds of the Scholarship Loan Fund Committee. No action was taken and Speaker Froyd indicated that since there was some discussion on the report of the Scholarship Loan Fund Committee, that it was *referred to the committee on Executive, Governmental Affairs, and Economics.*

There being no old business brought before the House, Speaker Froyd called on Mr. Arthur R. Abbey to introduce the visitors. After commenting on the array of administrative talent present, Mr. Abbey introduced Mr. Ray Miller of the American Medical Association, who had taken the position formerly held by Dallas Whaley; Mr. Ralph R. Marshall, Executive Secretary of the New Mexico Medical Society; Mr. Russell Hegland, Executive Secretary of the Montana Medical Association; Mr. Armand Bird, Executive Secretary of the Idaho Medical Association; Mr. Harold Bowman, Executive Secretary of the Utah State Medical Association; Mr. Kenneth Neff, Executive Secretary of Nebraska; and Mr. Donald G. Derry, Executive Secretary of the Colorado Medical Society. Dr. Paul R. Hildebrand, Immediate Past President of the Colorado Medical Society, was introduced by Mr. Donald Derry. Dr. Max Bell was introduced by Mr. Armand Bird.

Speaker Froyd then called on *Mr. Frank Hicks, Wyoming Safety Traffic Coordinator,* but he was *not present* to direct his remarks to the House of Delegates.

Reports

The report of the *Delegate to the AMA, Dr. Harlan B. Anderson,* was given orally. Speaker Froyd stated that there were some items in Dr. Anderson's report that might deserve some action by the House of Delegates and it was therefore *referred to the Executive, Governmental Affairs, and Economics Committee.*

Speaker Froyd called for the *Treasurer's report by Dr. Elmer S. McKay.* Dr. Duane M. Kline moved that the report be *approved* as printed in the Packet. Seconded by Dr. Claude O. Grizzle. Motion carried.

The *Secretary, Dr. Raymond E. Kunkel,* had no report. It was moved by Dr. T. L. Johnston and seconded by Dr. Bernard D. Stack that the report be *approved.* Motion carried.

Mr. Arthur R. Abbey had nothing to add to his report as printed in the Packet. It was moved by Dr. Elmer S. McKay and seconded by Dr. T. L. Johnston that the report be *approved.* Motion carried.

Dr. R. W. Holmes submitted a written report for the *Governmental Affairs Committee* which was not printed in the Packet. Speaker Froyd *referred* the report *to the committee on Executive, Governmental Affairs, and Economics.*

Speaker Froyd called on *Dr. Duane M. Kline* for his report for the *Special Advisory Committee to Children.* There was no written report. *No reference committee was designated by the Speaker.*

Speaker Froyd asked for the approval of the *WICHE Report* by Dr. Francis A. Barrett, as printed in the Packet. Dr. Claude O. Grizzle presented an *addendum to the report,* the article which was published in the June, 1967, issue of PULSE. Speaker Froyd *referred the report and the addendum to the Research, Organization, and Scientific Program Committee.*

Speaker Froyd referred to the written report by Dr. Francis A. Barrett on the *Rocky Mountain Medical Journal,* and then stated that Mr. Don Derry, Executive Secretary for Colorado, had a supplemental report in the Packet which he was making a part of the report by Dr. Francis A. Barrett. Speaker Froyd *referred* the report *to the committee on Executive, Governmental Affairs, and Economics.*

Speaker Froyd called for the report of the committee, *Advisory on Woman's Auxiliary,* Dr. Ray K. Christensen, Chairman. Dr. Christensen stated that he did not have any report.

Speaker Froyd stated that the Nominating Committee would meet as stated in the Packet.

Speaker Froyd *referred the following reports* with no comment to the *Executive, Governmental Affairs, and Economics Committee,* Dr. Duane Kline, Chairman. *Title XIX,* Dr. John J. Corbett; *Advisory on Workmen's Compensation,* Dr. Paul J. Preston; *Insurance and Retirement,* Dr. J. W. Barber; *Blue Cross Trustee Report,* Dr. Richard N. Winger; *Blue Shield Trustee Report,* Dr. E. Chester Ridgway; *Legislation,* Dr. Norman R. Black; *Advisory to Selective Service and Veterans' Care,* Dr. Bernard J. Sullivan; *Public Relations,* Dr. S. J. Giovale; *State Institutions,* Dr. William N. Karn; and the *Student Loan Fund.*

Speaker John H. Froyd stated that the *following reports* would be *referred* to the *Medical Services Committee,* Dr. Goode R. Cheatham, Chairman: The *Committee to Combat Health Misinformation,* Dr. Thomas T. McGranahan; *Medical Assistants,* Dr. Ray K. Christensen; *Medicine and Religion,* Dr. Henry N. Stephenson; and *Emergency Health Service,* Dr. Ben M. Leeper.

For the committee on *Nursing Shortage,* Dr. Ben M. Leeper, Chairman, Dr. Laurence W. Greene presented a mimeographed report to all members of the House of Delegates titled "Fact Sheet on Project to Stimulate Return of Inactive Professional Nurses and Other Health Discipline Personnel to Active Employment in Wyoming," and discussed the contents of the paper before the

House of Delegates. Speaker Froyd stated that he would submit the letter and the problem to the *Medical Services Committee.*

Speaker Froyd then referred to the committee on *Public Health.* No written report. Dr. Duane M. Kline read a letter he wrote regarding obtaining a hyperbaric chamber at the University of Colorado, and then said he would like to introduce a resolution that the Wyoming State Medical Society favor the obtaining of such equipment at the University of Colorado.

Speaker Froyd indicated that the report and the proposed resolution would be *referred* to the *Medical Services Committee.*

Speaker Froyd then announced that the House of Delegates would reconvene at 10:45 a.m. after a short recess.

The meeting was called to order by Speaker of the House John H. Froyd who announced that he would receive the reports under the *Reference Committee on Research, Organization, and Scientific Program.* The *Memorial Committee* report is printed in the Packet, setting out the following names:

Winfred W. Arrasmith, M.D., formerly of Casper, died in December, 1966.

Francis K. Burnett, M.D., formerly of Cheyenne, died June 27, 1966.

E. George Johnson, M.D., Douglas, died January 25, 1967.

Douglas W. McEnery, M.D., formerly of Cheyenne, died in December, 1966.

Speaker Froyd read the following resolution:

WHEREAS, Dr. George Price Lingenfelter of the Colorado Medical Society, a prominent Denver dermatologist, was one of the original members who organized the Rocky Mountain Medical Conference, and

WHEREAS, Dr. Lingenfelter was identified with the early day practice of medicine in both Colorado and Wyoming, and

WHEREAS, Dr. Lingenfelter was the official fraternal delegate to the Wyoming State Medical Society from the Colorado Medical Society, and

WHEREAS, Dr. George Lingenfelter was made an honorary member of the Wyoming State Medical Society, now therefore,

BE IT RESOLVED, That the Wyoming State Medical Society prepare a suitable memorial letter to Mrs. Reba McIntire Lingenfelter, his widow, expressing the deep gratitude and love that our members had for Dr. Lingenfelter, and

BE IT FURTHER RESOLVED, That this resolution be adopted by both the Wyoming State Medical Society and the Rocky Mountain Medical Conference and it be presented to Dr. Lingenfelter's widow.

Without discussion it was moved by Dr. Elmer S. McKay and seconded by Dr. Donald F. Mahnke that the *resolution be adopted.* Motion carried. At this point, the House of Delegates stood in a moment of silence in honor of the departed members.

Dr. Henry N. Stephenson reported that the *Orientation Program* was held at 2:00 p.m., August 27, that there was a good attendance, and that it was an interesting and most satisfactory meeting.

Dr. Laurence W. Greene, Chairman of the *Time and Place Committee,* announced that the 1968 meeting would be held at the Jackson Lake Lodge, Grand Teton National Park, August 27, 28, 29, and 30.

Dr. H. B. Anderson reporting for the *Constitution and Bylaws Committee,* stated that the suggested *changes in the Constitution and Bylaws* that were submitted last year had been *accepted,* but asked that it be officially shown in these minutes that the proposed changes which were printed in last year's minutes, *have been adopted* and are in effect at this time.

Speaker Froyd stated that when the minutes of last year's meeting were approved, the changes in the Constitution and Bylaws were approved and accepted.

The following reports were also referred to the Reference Committee on Research, Organization, and Scientific Program with no comment: *American Medical Association Education and Research Foundation,* Dr. William T. Ward; *Program and Entertainment,* Dr. Ray K. Christensen; *Rocky Mountain Medical Conference,* Dr. John H. Story; *Science Fair,* Dr. Herbert Jackman; and *Special Committee on Workmen's Compensation,* Dr. R. H. MacLean.

Dr. James G. Haller submitted a *resolution* presented by Northeastern Wyoming concerning *mental health:*

THEREFORE BE IT RESOLVED, That a special committee be created and encouraged to investigate and report to this Medical Society those findings of significance and interest to the Wyoming State Medical Society.

Dr. Haller then introduced Dr. Don Morrison, Psychiatrist, to the House of Delegates. After some discussion, Speaker John H. Froyd *referred the proposed resolution to the committee on Medical Services.*

Dr. Bernard D. Stack presented the following *resolution about osteopaths* proposed by Fremont County:

BE IT THEREFORE RESOLVED, That the Wyoming State Medical Society define precisely the ethical standards for the professional relationship between its members and the practitioners of the other healing arts, with particular reference to the consultation and surgical assistance.

Speaker Froyd *referred* the above resolution to the *committee on Research, Organization, and Scientific Program.*

Dr. William G. Erickson presented the following resolution:

BE IT RESOLVED, That federally designated physicians in Wyoming be allowed to practice medicine in the care of patients of the United States Public Health Service in community hospitals in the State of Wyoming.

Speaker Froyd *referred* Dr. Erickson's *proposed resolution* to the committee on *Executive, Governmental Affairs, and Economics.*

Dr. Fenworth Downing discussed the formation of a *Wyoming Association of Professions* which would include the Wyoming State Bar, the Wyoming State Dental Association, the Wyoming State Medical Society, the Wyoming Pharmaceutical Association, the Wyoming Veterinary Medicine Association with other state organizational members to be considered.

Without setting out Dr. Downing's remarks at length, his *proposal was submitted to the committee on Research, Organization, and Scientific Program.*

Dr. Claude O. Grizzle presented the following resolution regarding *continuing education:*

THEREFORE BE IT RESOLVED, That the Wyoming State Medical Society approve, affirm, and support the concept of Continuing Education for all health personnel and professionals in the State of Wyoming.

The resolution was *referred* to the *committee on Medical Services.*

Speaker Froyd introduced *Dr. Tim Flemming of Ft. Washakie, of the Indian Service,* who addressed the House of Delegates regarding the handling of Indian patients.

Dr. Elmer S. McKay stated that he had a resolution that the *Governmental Affairs Committee be allowed a budget of $300.00 a year.*

Dr. McKay's *proposed resolution was referred to the Executive, Governmental Affairs, and Economics Committee.*

Whereupon it was moved by Dr. Bernard D. Stack and seconded by Dr. John J. Corbett that a recess be taken until 9:00 a.m. August 29. Motion carried.

SECOND MEETING

Tuesday, August 29, 1967, 9:00 a.m.

The second session of the sixty-fourth annual meeting of the House of Delegates was called to order at 9:15 a.m., August 29, 1967, by Speaker John H. Froyd. Speaker Froyd announced that since the House of Delegates had recessed and not adjourned, that a quorum was present.

Dr. Duane M. Kline moved that Dr. James Stoetzel be seated as a delegate from Laramie County. Speaker Froyd stated that if there was no objection, the delegate would be seated. There being no objection, it was so ordered, and Dr. James Stoetzel was seated.

Speaker Froyd also stated that there being no objection the delegate from Sheridan County, Dr. Louis G. Booth, would be seated and it was so ordered.

The Speaker called for any new business. There being none, he asked for the report of Dr. Goode R. Cheatham, Chairman of the *Reference Committee on Medical Services.*

Medical Services Committee Report

Dr. Cheatham reported that the Medical Services Reference Committee met at 2:00 p.m. August 28, 1967. Present were James E. Stoetzel and William Erickson. Dr. Cheatham served as Chairman. There was no written report from the following subcommittees: Medical Assistants, Public Health, Public Safety, and Emergency Health Services. A fact sheet on the Project to Stimulate Return of Inactive Professional Nurses and Other Health Discipline Personnel to Active Employment in Wyoming sent by the Nurse Coordinator, Miss Barbara R. Goetz, R.N., was accepted as a source of information for the Nursing Shortage Committee, which also submitted no written report. Written reports from the following subcommittees were contained in the Delegate Packet: Committee to Combat Health Misinformation, Medicine and Religion. The Reference Committee recommends acceptance of these reports. Dr. Cheatham moved the *acceptance of the reports.* Seconded by Dr. H. B. Anderson. Motion carried.

Dr. Cheatham stated that the following resolutions were studied by the committee:

WHEREAS, The present organization of the Wyoming State Medical Society does not currently provide for a committee to cover the area of Mental Health, and

WHEREAS, The field of Mental Health is a significant area of interest to the medical profession and deserving of more intimate interest by the Wyoming State Medical Society,

BE IT RESOLVED, That a special committee be formed and encouraged to investigate and report to this Medical Society these findings of significance and interest to the Medical Society.

Dr. Cheatham then moved that the resolution be *adopted.* Seconded by Dr. John J. Corbett. Motion carried.

RESOLUTION NO. 2.

WHEREAS, A hyperbaric unit for treatment and research would provide for an unfilled need in the treatment of Wyoming's people,

THEREFORE BE IT RESOLVED, That the Wyoming State Medical Society go on record as expressing a definite need for a hyperbaric unit, approximately located within the Rocky Mountain area.

Dr. Cheatham stated the committee recommended *"do pass"* and he so moved. Seconded by Dr. Frank W. Laird. Motion carried.

RESOLUTION NO. 3.

WHEREAS, It is generally recognized that there is a need for continuing education for all professionals,

THEREFORE BE IT RESOLVED, That the Wyoming State Medical Society approve, affirm, and support the concept of Continuing Education for all health personnel and health professionals in the State of Wyoming.

Dr. Cheatham stated that the committee recommended *"do pass"* and he so moved. Seconded by Dr. James E. Stoetzel. Motion carried.

Chairman Goode R. Cheatham then stated that the report of the Medical Services Committee was concluded.

President Ray K. Christensen presented Mrs. Ray K. Christensen, President of the Woman's Auxiliary to the Wyoming State Medical Society, and Mrs. Paul R. Yedinak, President-elect of the Woman's Auxiliary, to the Wyoming State Medical Society, both of whom addressed the House briefly.

Executive, Governmental Affairs, and Economics Reference Committee Report

Dr. Duane M. Kline, Chairman of the Executive, Governmental Affairs, and Economics Reference Committee, reported that the committee met at 2:00 p.m. on August 27, 1967, and that the following reports were received without comment as set out in the Delegate Packet: Advisory on Woman's Auxiliary, Advisory on Workmen's Compensation, Insurance and Retirement, Blue Cross Trustees' Report, Blue Shield Trustees' Report, Legislation, Nominating, Public Relations, and State Institutions. Dr. Kline then moved that the reports be *accepted.* Seconded by Dr. Goode R. Cheatham. Motion carried.

Dr. Kline stated that it was recommended that the Governmental Affairs Committee report be accepted as printed and distributed at the House of Delegates meeting, and he so moved that the report be *accepted.* Seconded by Dr. Harlan B. Anderson. Motion carried.

Dr. Kline stated that due to the lack of a quorum at the Council Meeting on August 27, the minutes of that meeting were given to his committee for approval; that they were approved with one exception which was under the item, "Budget", and this was that the following resolution be presented to this body for consideration and amendment of the budget:

RESOLVED, That the Governmental Affairs Committee be allowed a budget of $300 a year to help defray expenses.

Dr. Kline stated that it was the recommendation of the committee that the Council Meeting minutes with the amendment be *approved* by resolution, and he so moved. Seconded by Dr. John J. Corbett. Motion carried.

Dr. Kline referred to the report of the *Military and Veterans' Affairs, Advisory to Selective Service and Veterans' Care* and said that it was *approved with the following suggestion:*

RESOLVED, That the Military and Veterans' Affairs Committee submit a written report.

Dr. Kline then moved that the *resolution and report be accepted.* Seconded by Dr. T. L. Johnston. Motion carried.

Chairman Kline stated that the *report of the Scholarship Student Loan Fund Committee* was accepted as written but with the following resolution:

BE IT RESOLVED, That the Scholarship Loan Fund Committee be empowered to establish a scholarship and/or loan fund for higher education to be awarded to a member of the family of a Wyoming physician, or a family member of a former Wyoming physician, and that a separate fund be initiated to provide for this; rules and regulations governing this fund be formulated and presented to the next House of Delegates meeting.

Dr. Kline stated that it was the recommendation of the committee that *this resolution be passed* and so moved. Seconded by Dr. John J. Corbett. After considerable discussion, the motion was carried.

It was recommended that the *AMA report be accepted in its entirety as an informational report only,* and Dr. Kline so moved. Seconded by Dr. John J. Corbett. Motion carried.

Dr. Kline stated that the following resolutions originated in or were submitted to his committee:

BE IT RESOLVED, That the portion of the AMA report pertaining to modernization of abortion laws be referred to the Maternal Health Committee for study, reports, and recommendations at next year's State Meeting.

Dr. Kline stated that it was the recommendation of the committee that the resolution *"do pass"* and he so moved. Seconded by Dr. T. L. Johnston. Motion carried.

The following resolution was presented by Dr. Kline:

BE IT RESOLVED, That federally designated physicians attached to the United States Public Health Service in Wyoming be allowed to practice medicine in the care of beneficiaries of the Division of Indian Health of the United States Public Health Service in community hospitals in the State of Wyoming. It is recommended that the hospital medical staffs involved approve each applicant and it is further recommended that Wyoming licensure should be obtained where feasible.

After much discussion, Dr. Thomas Nicholas offered the following *substitute resolution:*

BE IT RESOLVED, That the Wyoming State Medical Society approve the principle that federal government physicians be allowed to pursue these duties within the framework of the law of the State of Wyoming and the bylaws of the hospitals involved.

It was moved by Dr. Kline and seconded by Dr. Ted Johnston that the *substitute resolution be approved.* Motion carried.

Dr. Kline stated that Mrs. Darleen Van Velzor typed the minutes of the meeting of the Executive, Governmental Affairs, and Economics Committee last night and that she had a recent death in the family and he requested that the House submit to her a formal note of thanks. It was so moved by Dr. John J. Corbett and seconded by Dr. Claude O. Grizzle. Motion carried.

Research, Organization and Scientific Program Reference Committee Report

Dr. Donald F. Mahnke, reporting for the Research, Organization, and Scientific Program Committee, said that his committee met at 2:00 o'clock yesterday afternoon. Dr. T. L. Johnston and Dr. Mahnke were present as members of the committee. There were three committees that made no written reports: the Historical Committee, the Program and Entertainment Committee, and the Resolutions Committee. There were written reports by the AMA-ERF, the Credentials Committee, Memorial Committee, Orientation Committee, Rocky Mountain Medical Conference Committee, Science Fair Committee, and the Time and Place Committee. These were reviewed and it was recommended that they be *accepted as presented,* and Dr. Mahnke so moved. Seconded by Dr. Charles R. Lowe. Motion carried.

The other special reports that were considered were the special *Workmen's Compensation report,* and this was recommended to be *accepted as printed,* and Dr. Mahnke so moved. Seconded by Dr. Charles R. Lowe. Motion carried.

The second special report which was considered was the *WICHE Report* as appears in the Packet, and the committee recommended *acceptance of the report, with the addendum to the report published by Dr. Claude O. Grizzle in the last issue of PULSE.* He so moved. Seconded by Dr. T. L. Johnston. Motion carried.

Dr. Mahnke stated that the committee was requested, with regard to Dr. Fenworth M. Downing's proposal, for the *formation of a Wyoming Professional Association.* It was felt that the problem should properly be *referred to the subcommittee on Public Relations* under the Executive, Governmental Affairs, and Economics Committee, and he so moved. Seconded by Dr. Goode R. Cheatham. Motion carried.

Dr. Mahnke stated that his committee considered Dr. Bernard D. Stack's *resolution regarding Osteopaths,* and then submitted the following as a *substitute resolution:*

WHEREAS, The position of the AMA is that association by Doctors of Medicine with Doctors of Osteopathy should not be deemed unethical if the Doctor of Osteopathy bases his practice on the same scientific principles as those adhered to by members of the American Medical Association, and

WHEREAS, This policy is currently being applied at the local level where it can be ascertained if the individual Doctor of Osteopathy does, in fact, practice a method of healing founded on a scientific basis, and

WHEREAS, Such association between Doctors of Medicine and Doctors of Osteopathy in matters of consultation and surgical assistance is of a voluntary and not mandatory nature,

BE IT HEREBY RESOLVED, That the position of voluntary professional association by Doctors of Medicine with Doctors of Osteopathy by Wyoming Doctors of Medicine be the same as that position taken by the American Medical Association, and

BE IT FURTHER RESOLVED, That should the local medical society request help in determining the basis used by an individual in the practice of the healing arts, the President of the Wyoming State Medical Society be empowered to appoint a committee to render such assistance.

Dr. Mahnke then moved the *adoption of the resolution.* Seconded by Dr. Paul R. Yedinak. After lengthy discussion by numerous of the members of the House of Delegates, Speaker Froyd called for a vote and the motion was carried.

Dr. Mahnke stated that this concluded his report.

Speaker John H. Froyd moved that the House express its appreciation to Reference Committee Chairmen and members of the committees for a job well done. Seconded by Dr. John J. Corbett. Motion carried.

Whereupon a recess was taken from 10:30 to 11:00 o'clock of the same day, at which time the following proceedings were had, to-wit:

There being no new business to come before the House of Delegates, Speaker John H. Froyd introduced the Wyoming State Medical Society *President, Dr. Ray K. Christensen,* who delivered the *President's Address,* which will appear in the *Rocky Mountain Medical Journal,* at the conclusion of which the House of Delegates responded with standing show of appreciation.

Speaker Froyd read a telegram to Dr. Ray K. Christensen from Senator Clifford Hansen, expressing his best wishes for an interesting and successful meeting.

Election of Officers

The report of the *Nominating Committee* was handed to Speaker Froyd by Dr. Laurence W. Greene, Chairman. Dr. Froyd said that the Nominating Committee, for *President-elect* nominated *Dr. Henry N. Stephenson.* There being no nominations from the floor, Dr. Paul R. Yedinak moved that the nominations be closed and Dr. Henry Stephenson be *elected* by unanimous acclamation. Seconded by Dr. John J. Corbett. Motion carried.

Dr. Froyd announced that the Nominating Committee nominated for *Vice President, Dr. Raymond E. Kunkel.* There being no further nominations from the floor, it was moved by Dr. Thomas Nicholas the nominations be closed and that a *unanimous* ballot be cast for Dr. Ray Kunkel for Vice President. Seconded by Dr. Donald F. Mahnke. Motion carried.

Speaker Froyd stated that the Nominating Committee had presented two names in nomination for *Treasurer, Dr. Fenworth M. Downing and Dr. John J. Corbett.* There being no further nominations from the floor, it was moved by Dr. Duane M. Kline and seconded by Dr. Claude O. Grizzle that the nominations be closed. Motion carried. Speaker Froyd ordered ballots passed and appointed Dr. Paul R. Yedinak and Dr. James J. Batty as tellers. The tellers reported to Speaker Froyd who announced that *Dr. Corbett* had been *elected* Treasurer.

The Nominating Committee placed in nomination for *Secretary, Dr. Elmer S. McKay.* There being no further nominations from the floor, it was moved by Dr. Paul R. Yedinak that the nominations be closed and Dr. McKay be *elected* by unanimous ballot. Seconded by Dr. John J. Corbett. Motion carried.

Speaker Froyd stated that the Nominating Committee had placed in nomination *Dr. Roy W. Holmes* for *Speaker of the House.* There being no further nominations from the floor, it was moved by Dr. Charles R. Lowe that the nominations be closed and a *unanimous* ballot cast for Dr. Holmes. Seconded by Dr. Henry N. Stephenson. Motion carried.

For *Vice Speaker of the House of Delegates,* the Nominating Committee submitted the name of *Dr. Goode R. Cheatham.* There being no additional nominations from the floor, it was moved by Dr. Thomas Nicholas and seconded by Dr. Henry N. Stephenson that the nominations be closed and a *unanimous* ballot cast for Dr. Cheatham. Motion carried.

Speaker Froyd stated that the *three-year term on the Grievance Committee* would be *filled by appointment by the President* with the approval of the Council.

Advisory Committee to Selective Service, a three-year term, *Dr. Duane M. Kline* was nominated. There being no further nominations, Dr. Henry N. Stephenson moved the nominations be closed and a *unanimous* ballot cast for Dr. Kline. Seconded by Dr. Paul R. Yedinak. Motion carried.

Speaker Froyd stated that the President of each component society submits one name for *Blue Shield Trustee.* We are to appoint two nominees for each vacancy. These may not come from the floor. They have to come from the component societies prior to the meeting and we have five nominations for four vacancies. The Blue Shield will take the four we submit and from that, select two. These men are *Dr. Ray K. Christensen, Dr. Roy W. Holmes, Dr. Louis G. Booth, Dr. Thomas T. McGranahan, and Dr. Claude O. Grizzle.* Dr. Froyd asked that each member vote for four.

Speaker Froyd suggested that while the tellers were making their count that the House could proceed with the final election of *two members to the Rocky Mountain Medical Conference,* Dr. D. G. MacLeod and Dr. Smith both having served their terms. The Nominating Committee placed in nomination *Dr. John R. Nye* of Laramie and *Dr. Pat Nolan* of Buffalo. There being no further nominations from the floor, it was moved by Dr. Henry N. Stephenson and seconded by Dr. John J. Corbett that the nominations be closed and a *unanimous ballot cast for the two nominees.* Motion carried.

Dr. Froyd presented the following resolution:

WHEREAS, The 64th annual meeting of the Wyoming State Medical Society held at Jackson Lake Lodge on August 28, 29, 30, 31, and September 1, 1967, was most successful, having accomplished much from both the scientific and organizational aspects, and

WHEREAS, The Wyoming State Medical Society House of Delegates is especially appreciative of the influences outside its own body which contributed to the enjoyment and accomplishments of the meeting, and

WHEREAS, The House of Delegates desires to express its appreciation to all those having cooperated to make the meeting a success;

BE IT THEREFORE RESOLVED, That the Wyoming State Medical Society express its appreciation and gratitude to all those involved in and contributing to the success of its 64th annual convention, including the exhibitors and their congenial personnel, the distinguished guests who made possible the success of the scientific programs, the officers and employees of the Grand Teton Lodge Company, and all persons even remotely concerned with the meeting.

It was moved by Dr. Claude O. Grizzle and seconded by Dr. John J. Corbett that the *resolution be adopted.* Motion carried.

The tellers having completed their count, reported to Speaker Froyd who announced that the House of Delegates had elected *Drs. Grizzle, Booth, Christensen, and Holmes as nominees for Blue Shield Trustee.*

Speaker Froyd, before turning the gavel over to Dr. Ray K. Christensen, expressed his appreciation to the House of Delegates for being given the opportunity to serve the Wyoming State Medical Society as an officer for six of the past seven years.

Dr. Christensen handed the gavel and the horse bell, along with appropriate remarks to the *new President of the Wyoming State Medical Society, Dr. Laurence W. Greene,* who graciously accepted the symbols of office, and said, "Thank you."

Prior to adjournment, there was a short discussion by Dr. Claude O. Grizzle, Dr. Robert Alberts, and Dr. Raymond E. Kunkel in behalf of WICHE and Title XIX.

It was moved by Dr. John J. Corbett and seconded by Dr. Goode R. Cheatham that the House of Delegates stand adjourned. Motion carried.

UTAH

Dr. N. Frederick Hicken Receives AMA Appointment

Word was recently received from the American Medical Association Headquarters in Chicago of the appointment of Dr. N. Frederick Hicken, Salt Lake City surgeon, as Vice Chairman of the Section on General Surgery. In this new assignment, Dr. Hicken will be involved in planning the General Surgical Program for the AMA National Convention in 1968. He has served previously on the AMA Program Committee responsible for the national TV hookup involved with gallbladder surgery.

Dr. David A. Dolowitz Receives Honors

Two signal honors were recently awarded Dr. David A. Dolowitz, Salt Lake City otolaryngologist, who recently returned to private practice. For "contributions to medical education through the medium of cinematography," he will receive the Third Annual Professor Doctor Ignacio Barraquer Memorial Award. From the American Academy of Ophthalmology and Otolaryngology, he will receive the Academy's Award of Merit for "services to the Academy in its educational program." Both of these awards were presented at the Joint Session of the American Academy of Ophthalmology and Otolaryngology in Chicago, October 30.

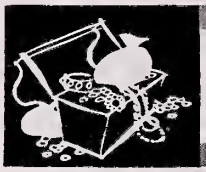
* * *

Utah Thoracic Society Elects New Officers

Named as President of the Utah Thoracic Society, medical section of the Utah Tuberculosis and Health Association, is Dr. Harold V. Liddle. Dr. Liddle is a thoracic surgeon in practice at the Rumel Clinic in Salt Lake City.

Other officers elected were: Dr. Conrad B. Jensen, Salt Lake City thoracic surgeon, President-elect; Dr. Farrell M. Calton, Ogden Pulmonary physiologist, Secretary-Treasurer; and as members of the Executive Committee, Dr. A. D. Renzetti, Jr., internist at the University of Utah Medical Center; and Dr. Richard H. Keller, radiologist at Cottonwood Hospital.

Committee chairmanships were assigned to: Dr. Conrad Jenson, Program; Dr. Clynn Ford, Professional Education; Dr. W. Knox Fitzpatrick, Membership; Dr. Farrell Calton, R D Screening; and Dr. C. DuWayne Schmidt, Breathing Improvement classes.



MONTANA

Election of Officers

At the final session of the House of Delegates, Alfred M. Fulton, M.D., Billings, was installed as president of the Montana Medical Association for the term 1967-68 to succeed A. L. Vadheim, M.D., Bozeman. Mark B. Listerud, M.D., Wolf Point, was named president-elect; Oscar A. Swenson, M.D., Sidney, vice-president; John A. Newman, M.D., Butte, secretary-treasurer; and William S. Harper, M.D., Helena, assistant secretary-treasurer. A. L. Vadheim, M.D., and Paul J. Gans, M.D., Lewistown, were elected members-at-large of the Executive Committee.

* * *

March 22-23, 1968, Montana Medical Association, 21st Interim Session, Holiday Motel, Helena.

OBITUARIES

Colorado

Dr. Fordyce G. McCabe of Boulder died September 9. He had been in ill health for some time and had closed his office during the past spring. He had started his practice in Frederick, but came to Boulder in 1933.

Dr. McCabe was born in Osage, Iowa on June 17, 1900, and was sixty-seven years old at the time of his death. His father was a dentist, retired from active practice at the time of his son's birth, but later became dental hygienist for the Boulder Public Schools.

Dr. McCabe graduated from the University of Michigan Medical School in 1929, and interned in the San Francisco City Hospital. He then joined his uncle, the late Dr. F. H. McCabe in the practice of general medicine in Frederick. When he came to Boulder he specialized in Obstetrics and Gynecology, having been licensed in Colorado in 1930.

Dr. McCabe was a veteran of World War I, and served overseas in France, Belgium, Germany and Luxembourg.

He married the former Katherine Feigel of Boulder, in Iowa City, and they became the parents of three children: Fordyce G. McCabe, Jr., now with United Air Lines in California; Mrs. Richard (Mary Katherine) Harder of Twin Falls, Idaho; and Mrs. James (Lucia Jane) Brady of Boulder. Besides the widow and three children, Dr. McCabe is survived by a sister, Mrs. H. W. (Lucia) Kendrick of Boulder and a brother, Harold McCabe of Fullerton, California.

* * *

Dr. H. Paul Johnson, of Canon City, Colorado, a member of the Section of Ophthalmology of the Mayo Clinic, Rochester, Minnesota, from 1943 to 1945, died in Canon City on May 4, 1967, of arteriosclerosis.

Dr. Johnson was born in Maple Valley, Minnesota, on August 13, 1897. He attended the University of Minnesota, from which he received his M.D. degree in 1930. He was an intern in Asbury Hospital in Minneapolis and from 1930 to 1932 he was an assistant in medicine in the University of Minnesota Medical School. He was in practice until 1941 in Harmony, Minnesota.

Dr. Johnson was appointed to the staff of the Mayo Clinic in 1943 as an assistant to Dr. Avery D. Prangen in refraction. He left the Mayo Clinic in 1945; subsequently he practiced opthalmology in Minot, North Dakota; Albany, Oregon; and at the Austin Clinic in Austin, Minnesota. In Canon City he was a member of the staff of Saint Thomas More Hospital.

Dr. Johnson was a member of the American Medical Association, the Minnesota State Medical Association, the North Dakota State Medical Association, the Oregon State Medical Society, the Colorado Medical Society and the Alumni Association of the Mayo Graduate School of Medicine.

* * *

Montana

Vezio Oliver Ungherini, M.D., Butte, Montana, died on March 10, 1967. Dr. Ungherini was born in Italy on September 26, 1888. He received his M.D. degree from the University of Illinois College of Medicine in 1914, and shortly thereafter engaged in the practice of medicine in Butte. He continued his practice in Butte until he retired in 1960.

* * *

The death of **John Paul Ritchey, M.D.,** Missoula, Montana, was recently reported. Dr. Ritchey was born on January 13, 1878, in Evansville, Indiana. He received his M.D. degree from Rush Medical College in 1903 and shortly thereafter engaged in the practice of medicine in Missoula, where he remained until his retirement in 1954. Dr. Ritchey was a past president of this Association and served as a member of several of its committees between 1940 and 1950.

* * *

James Charles Shields, M.D., Butte, Montana, died on August 23, 1967. Dr. Shields was born in Kalamazoo, Michigan, September 3, 1881. He received a B.S. degree from Valparaiso University in 1908 and an M.D. degree from the St. Louis University School of Medicine in 1917. He completed his internship at Alexian Brothers Hospital in St. Louis. Shortly thereafter, he moved to Butte to engage in the practice of surgery and continued active in the practice of his profession until shortly before his death. Dr. Shields was chief of staff of the old St. James Hospital and president of the medical and surgical staff on several occasions. He was a past president of the Silver Bow County Medical Society and of the Montana Medical Association, and served as the first president of the Montana Blue Shield/Blue Cross plans. He was also one of the founders of the Mary E. Swift Tumor Clinic and was most active in community affairs. Dr. Shields completed fifty years in the active practice of medicine last June and was to have been recognized as a member of the Fifty Year Club of the Montana Medical Association during the annual banquet of the 89th Annual Meeting in Missoula. When Dr. Shields submitted his biography about the Fifty Year Club he wrote that "My profession is my vocation and my avocation; I can't think of anything more rewarding."

Utah

Dr. A. N. Leonard, Salt Lake City ear, nose and throat specialist, died August 24, 1967, at the age of 89.

Born February 22, 1878, in St. John, Tooele County, Utah, he was the son of David Henry and Emma Childs Leonard. He married Georgenia Spilsbury on July 17, 1901, in the St. George LDS Temple; she passed away in 1956. He subsequently married Leah Johnson on October 17, 1957.

Entering the Brigham Young Academy in Provo, he organized the class of 1903 and became its first president. He received his M.D. degree in 1911 from the Northwestern School of Medicine, and subsequently became superintendent of the Southern Utah Hospital in Cedar City for a period of nine years. He later returned to Salt Lake City to specialize in the field of otorhinolaryngology.

In 1953 he was appointed by former Governor J. Bracken Lee as Utah's representative to the World Medical Convention held in Richmond, Virginia.

Dr. Leonard was an active member of the Church of Jesus Christ of Latter-day Saints, and at the time of his death was a high priest in the Garden Park Ward of Bonneville Stake. He was a member of the Utah Poetry Society and Utah Writer's League, and in 1956 was elected president of the BYU Emeritus Club.

Survivors include his widow; one son, Bevan S., Salt Lake City; and one daughter, Mrs. William (Dorothy) MacKenzie, Winnetka, Illinois; seven grandchildren, five great-grandchildren; brother and sister, Myron and Mrs. Emma Summerhayes, both of Salt Lake City.

* * *

Dr. Hyrum R. Reichman, Salt Lake City physician and renowned medical authority, died September 25, 1967 in a Salt Lake hospital.

Born May 22, 1907 in Salt Lake City, Dr. Reichman was the son of Gustav and Louise Hofer Reichman. He married Virginia Stevens on January 1, 1932, in the Salt Lake L.D.S. Temple.

A graduate of the Northwestern University School of Medicine, Chicago, and the University of Utah, Dr. Reichman practiced as a proctologist in Salt Lake City since 1936. He was the author of many articles relating to his specialty which have been published in national scientific journals.

Dr. Reichman served as former president of the American Proctological Society, the American Board of Proctology, the Salt Lake County Medical Society, and the staff of the L.D.S. Hospital. While president of the American Proctological Society, he spoke at the 1964 Hawaiian Medical Seminar and also presented papers to the British proctologists in London. He traveled extensively throughout the United States and many foreign countries presenting papers on proctology and associated subjects at medical conventions. Last April he was a featured guest speaker before the 30th annual New Orleans graduate medical assembly.

An assistant clinical professor of surgery at the University of Utah College of Medicine, and former chairman of the American Medical Association's section of gastroenterology and proctology, Dr. Reichman also served as chairman of committees for the American College of Surgeons and the Southwestern Surgical Congress. He was an honorary fellow of the Pennsylvanian Proctological Society; fellow, American College of Surgeons and American Proctological Society; honorary member, Proctologic Society of Chile, and Proctologic Society of Mexico, as well as the Reno Surgical Society; senior fellow, Southwestern Surgical Congress; and diplomate of the American Board of Proctology.

Dr. Reichman was an active member of the Yalecrest Ward, Church of Jesus Christ of Latter-day Saints. He was also president of the Bonneville Knife and Fork Club, and was active in the Salt Lake Country Club, Alta Club, and Rotary Club.

Survivors include his widow; two sons and two daughters, Lane Stanley, Richard Craig, and Mary Ann Reichman, all of Salt Lake City; Mrs. Carol Jean Kain of Los Angeles, California; and brothers and sisters, Dr. Wilford G. Reichman, St. George; Owen G. Reichman, Mrs. Helen Robinson, both of Salt Lake City; and Mrs. Ida Leonard of Bountiful.

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THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Abnormal Sexual Development; A Genetic and Endocrine Approach to Diagnosis: By Daniel D. Federman. Philadelphia, 1967, Saunders. 206 p. Price: $8.75.

Baby and Child Care: By Benjamin Spock. New York, 1967, Pocket Books. 627 p. Price: .50.

Cervical Spondylosis and Other Disorders of the Cervical Spine: By Walter Russell Brain. Philadelphia, 1967, Saunders. 232 p. Price: $10.00.

Claude Bernard and Experimental Medicine: By Francisco Grande and Maurice B. Visscher. Cambridge, Mass., 1967, Schenkman. 210 p. Price: $8.95.

Communicating with the Patient: By P. Ley and M. S. Spelman. St. Louis, Missouri, 1967, Green. 128 p. Price: $6.50.

Growth of Medicine: Edited by Frederick Stenn. Springfield, Ill., 1967, Thomas. 199 p. Price: $9.50.

Gynecologic and Obstetric Pathology with Clinical and Endocrine Relations: By Emil Novak. Philadelphia, 1967, Saunders. 696 p. Price: $20.00.

Gynecologic Pathology: By Frederick T. Kraus. St. Louis, Missouri, 1967, Mosby. 504 p. Price: $18.50.

Hearing Aids on Prescription: By Herman G. Wallenfels. Springfield, Ill., 1967, Thomas. 109 p. Price: $8.50.

Insurance for the Doctor: By Harvey Sarner and Herbert C. Lassiter. Philadelphia, 1967, Saunders. 293 p. Price: $9.00.

Introduction to Anesthesia: By Robert D. Dripps, James E. Eckenhoff and LeRoy D. Vandam. Philadelphia, 1967, Saunders. 529 p. Price: $10.50.

Learning Medical Terminology Step by Step: By Clara Gene Young and James D. Barger. St. Louis, Missouri, 1967, Mosby. 327 p. Price: $7.50.

Physical Bases of Circulatory Transport: By E. B. Reeve and Arthur C. Guyton. Philadelphia, 1967, Saunders. 381 p. Price: $20.00.

Practical Ocular Motility: By Hazel M. Dendy and Elizabeth T. Shaterian. Springfield, Ill., 1967, Thomas. 196 p. Price: $9.50.

Recent Advances in Animal Nutrition: By J. T. Abrams. Boston, 1966, Little, Brown. 261 p. Price: $12.50.

Recent Results in Cancer Research: Edited by R. Schindler and others. Berlin, New York, 1966-1967, Springer-Verlag. v. 12. Price: $4.80.

Surgery for the Acquired Mitral Valve Disease: By Henry F. Ellis. Philadelphia, 1967, Saunders. 299 p. Price: $17.00.

Surgery of the Ear: By George E. Shambaugh. Philadelphia, 1967, Saunders. 722 p. Price: $33.00.

The Technique and Practice of Psychoanalysis: By Ralph R. Greenson. New York, 1967, International Universities Press. v. 1. Price: $12.50.

Veterinary Radiology: By William D. Carlson. Philadelphia, 1967, Lea. 474 p. Gift.

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MEETINGS

Hahnemann Medical College and Hospital Future Meetings

General Internal Medicine

Oct. 4, 1967 through March 27, 1968—
Wed. 1-4 p.m.
Directors: Wilbur W. Oaks, M.D.,
Daniel Mason, M.D., Sheldon R. Bender, M.D.
Hahnemann Medical College

Human Sexual Function and Dysfunction
Nov. 17-18, 1967
Director: Paul Jay Fink, M.D.
Marriott Motor Hotel

Psychodelic Drugs
March 18-20, 1968
Director: Paul Jay Fink, M.D.
Marriott Motor Hotel

Pre- and Postoperative Management of the Cardiopulmonary Patient
April 8-10, 1968
Directors: Joseph F. O'Malley, M.D.,
Wilbur W. Oaks, M.D.
Marriott Motor Hotel

Auscultation of the Heart
May 27-31, 1968
Directors: William Likoff, M.D.,
Bernard L. Segal, M.D.
Sheraton Hotel

Psychiatry in Internal Medicine
Nov. 18-20, 1968
Directors: Paul Jay Fink, M.D.,
Wilbur W. Oaks, M.D.
Sheraton Hotel

For further information concerning these meetings, contact the Director.

* * *

American College of Physicians

Specialists in internal medicine in New Mexico will hold a scientific meeting in Albuquerque, N. M., Dec. 1-2.

The meeting is one of some 35 scientific-educational meetings the ACP sponsors during the academic year. Held throughout the United States and Canada, the meetings help the College's 13,600 members keep abreast of developments in basic sciences and clinical medicine.

Among special guests will be John A. Layne, M.D., Great Falls, Mont., ACP Regent and consultant in internal medicine at the Fort Harrison Veterans Administration Hospital.

For further information concerning this meeting, contact Reginald H. Fitz, M.D., School of Medicine, University of New Mexico, 900 Stanford Dr. N.E., Albuquerque, N. M. 87106.

Swedish Hospital Lectureship

Dr. Hans Popper, internationally known hepatologist, from Mt. Sinai Hospital, New York City, will present the second annual Swedish Hospital Lectureship on December 15, 1967. The afternoon panel sessions will begin at 1:00 p.m. in Humphrey Auditorium at the University of Colorado Medical Center. The evening lecture on "Drug Induced Hepatic Injury" will follow dinner at the University Club in Denver.

Further information may be obtained from the Department of Pathology, Swedish Hospital, Englewood, Colorado.

* * *

Cancer Society Exposition

If advance reservations for the Rocky Mountain Cancer Exposition from students throughout Colorado are an indication, the Expo is going to be one of the big "happenings" of the fall season.

Expo officials said that as a result of the first announcement of the Expo, school officials have already made reservations for more than 20,000 students. Expo will be held in the Denver Coliseum November 27-December 3. Officials expect students from every high school in the state will attend the first-ever cancer-oriented show.

* * *

International College of Surgeons

The International College of Surgeons' Western Regional Meeting, sponsored by the Southern California Division, will be held November 19 through 22 at the Flamingo Hotel in Las Vegas, Nevada. The meeting will include over 25 scientific exhibits and industrial displays in addition to lectures on all types of surgery and military medicine that will be presented continuously.

Topics will range from "Contraception" to "A New Look at the 'One Day Hernia' and a Differential Epidural Block for Recurrent Inguinal Hernia Surgery" on to include others like "Knife and Gun-shot Wounds" and "The Experience of a Visiting Professor in Europe." Captain Paul Engle, commanding officer of the Naval Hospital at Long Beach, California, will present a lecture entitled, "The Role of the Hospital Ship as Medical Support in the Viet Nam Conflict."

Another distinguished participant will be Dr. Edward Compere, President of the International College of Surgeons. For further information contact the Southern California Division, 321 North Larchmont Boulevard, Los Angeles, California 90004.

* * *

Colorado Diabetes Association

The fifth annual Institute for doctors working in the field of diabetes will be held by the Colorado Diabetes Association at the Aspen Institute in Aspen, Colorado, February 21 through February 25, 1968. A program of the Institute will be available through the office of the Colorado Diabetes Association, 1375 Delaware Street, Denver, Colorado 80204, after December 15, 1967.

Midwinter Cancer Seminar

The second annual Midwinter Cancer Seminar, sponsored by the American Cancer Society, Colorado Division, will be held January 25-27, 1968, at the Lodge in Vail, Colorado.

Topics to be discussed at the seminar are "The Critically Ill Patient" and "Clinical Genetics." Guest speakers will be Dr. Leonard Larsen, past president of the American Cancer Society, from New York City and Dr. John Kinney, professor of surgery at Columbia P. and S., New York City.

Physicians in Colorado, Wyoming, New Mexico, Utah, Arizona, Idaho, Montana, Kansas, Nebraska and Oklahoma are being invited to attend the seminar.

Dr. Val Wolhauer, a member of the American Cancer Society, Colorado Division Executive Committee and Chief of Health Mobilization Services and Accident Prevention for the Colorado Health Department, has again arranged the program.

* * *

University of Colorado School of Medicine Postgraduate Medical Education

General Practice Review, January 14-20, 1968, Denver, Colorado. The fourteenth annual postgraduate course designed especially for the general practitioner. A full week—each day devoted to an important area of practice. Register for the entire course or for any selected days.

Sunday—**Iatrogenic Illness: A Problem of Medical Progress**
Monday—**Medicine**
Tuesday—**Pediatrics**
Wednesday—**Dermatology**
Thursday—**Surgery**
Friday—**Obstetrics and Gynecology**
Saturday—**Trauma**

For further information and detailed program, write to: The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado.

* * *

First International Conference on Prematurity

The First International Conference on Prematurity sponsored by the AMA Committee on Maternal and Child Care, will be held January 11-13, 1968 at Pier 66, Ft. Lauderdale, Florida.

An open invitation to attend is being extended to the chairmen and members of all state and county Maternal and Child Care, Infant and Perinatal Mortality Committees; State Health Department Directors of Maternal and Child Health; medical school faculty members in Departments of Obstetrics, Pediatrics, Preventive Medicine and Public Health. Other physicians and representatives of groups interested in the problems of prematurity from throughout the world are also cordially invited to attend.

Those interested in receiving additional information about registration for this Conference are requested to write Wesley J. Duiker, Secretary, Committee on Maternal and Child Care, American Medical Association. 535 North Dearborn Street, Chicago, Illinois 60610.

AMA National Conference on Emergency Medical Services

"The Community and Emergency Medical Services" will be the theme of a national conference sponsored by the American Medical Association January 18-20, 1968 at the San Francisco Hilton Hotel, San Francisco, California.

All aspects of a community's emergency medical services system will be discussed in terms of identification, coordination, and implementation. This system includes: first aid and emergency care, transportation of the ill and injured, emergency communications, and emergency facilities.

The conference is open to all persons involved or interested in their community's emergency medical care. This includes physicians; allied health personnel; hospital administrators; providers of ambulance services; public safety officials—police, fire and sheriff; government officials—local, county and state; representatives of service organizations; planners; educators; and private citizens. A cross section of the various national leaders of the above groups will be featured on the conference program.

For further information, write to: American Medical Association, Department of Hospitals and Medical Facilities, 535 North Dearborn Street, Chicago, Illinois 60610.

* * *

University of Colorado School of Medicine Postgraduate Courses of Interest to the General Practitioner

Modern Concepts of Allergy
December 6-8, 1967
Surgery of the Hand
February 20-23, 1968
Clinical Dermatology
April 25-27, 1968 (limited to 32)
Obstetrics and Gynecology
June 10-14, 1968 (Estes Park, Colorado)
Pediatrics
August 5-8, 1968 (Aspen, Colorado)
Internal Medicine
August 12-16, 1968 (Estes Park, Colorado)
The Hospital Medical Staff Conference
September 30-October 4, 1968
High-Risk Infant Care
One Week, Three Times Yearly

Note: The above dates are subject to change.

For further information and detailed programs, write to: The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado.

* * *

Respiratory Medicine

The faculty of the University of New Mexico School of Medicine will conduct a seminar on November 25, 1967 on respiratory medicine. The seminar will be held in the new Basic Medical Science Building of the University. There is a $20.00 registration fee. The program will be accredited for 6 hours by the American Academy of General Practice.

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DENVER MEDICAL SOCIETY LIBRARY

The Denver Medical Society Library is ranked among the ten leading society-owned libraries in the country.

It is maintained and operated by its members for their use and, by reciprocal agreement with the Colorado Medical Society, for the use of physicians whose state Associations participate in the publication of the Rocky Mountain Medical Journal.

The collection contains approximately 50,000 volumes and receives more than 600 medical journals monthly.

The Library provides medical reference service (limited to a three-year search unless otherwise instructed). Physicians may come by, write, telephone or telegraph their requests for material. Items will be mailed on the day requested, if at all possible. Cost: Postal rates for "Educational Material," presently 10c first pound and 5c each additional pound or fraction. Photocopies of articles can be supplied at 10c per page.

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Olathe Pharmacy
Olathe, Colorado

PLATTEVILLE, COLORADO
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Platteville Chamber of Commerce
Platteville, Colorado 80651

Associate or Partnership

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825 6th Street
Del Norte, Colorado 81132

HAXTUN, COLORADO
Contact R. J. Ridenour, M.D.
Haxtun Community Hospital
Haxtun, Colorado 80731

WESTMINSTER, COLORADO
Contact Robert F. Murch, M.D.
8221 Bradburn Blvd.
Westminster, Colorado 80030

Internal Medicine Practice

GREELEY, COLORADO
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Greeley, Colorado 80631

PUEBLO, COLORADO
Contact Medical Specialties Group
1901 Hudson
Pueblo, Colorado 81001

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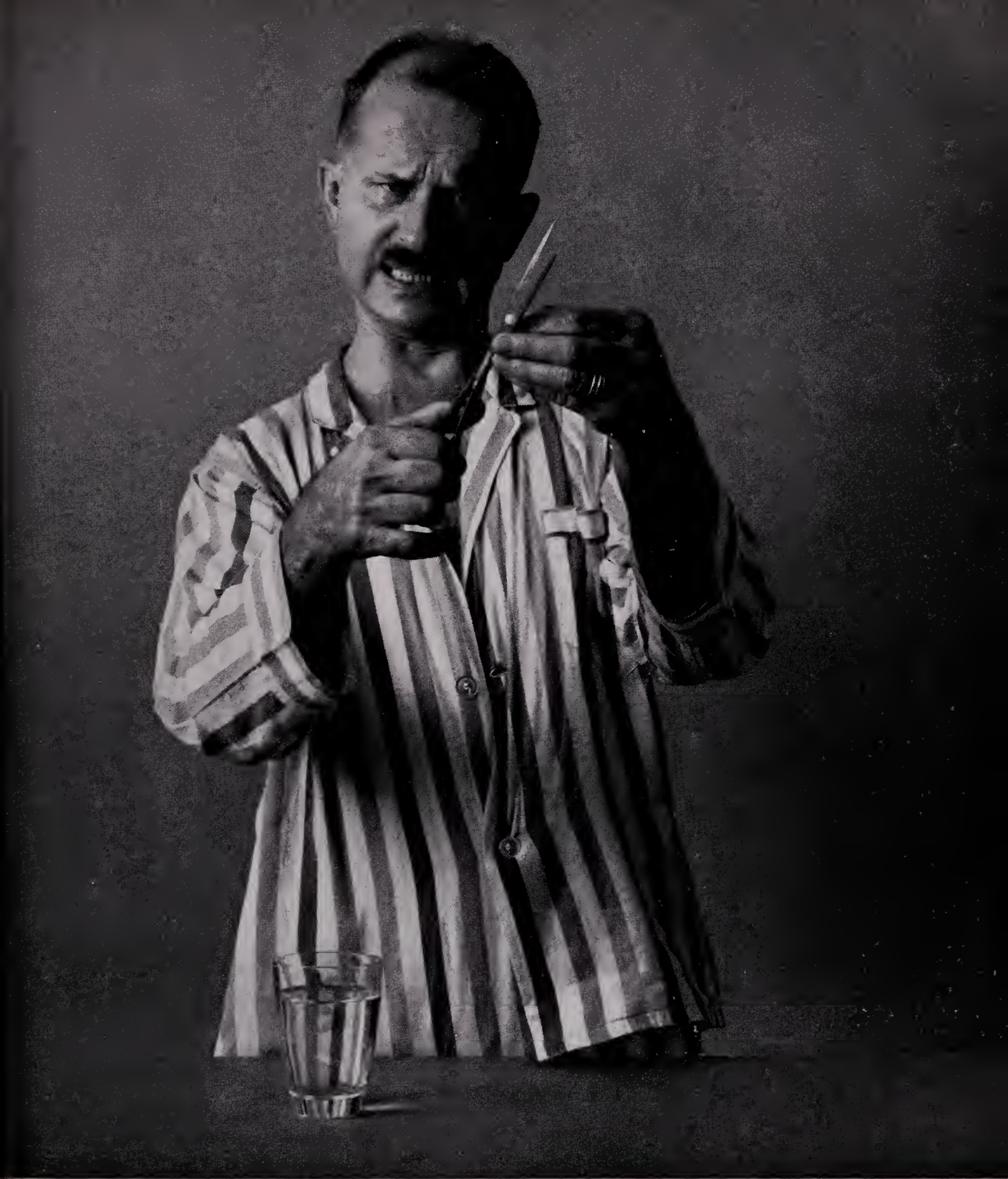

laybe your patients complain:
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ase see brief prescribing summary at the end of advertisement.

Maybe you abandoned Hygroton chlorthalidone
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lications: Hypertension and many types of ema involving retention of salt and water.

ntraindications: Hypersensitivity and most ses of severe renal or hepatic disease.

rning: With the administration of enteric- ated potassium supplements, which should used only when adequate dietary supple- ntation is not practical, the possibility of all bowel lesions (obstruction, hemor- ge, and perforation) should be kept in nd. Surgery for these lesions has fre- ently been required and deaths have oc- rred. Discontinue enteric-coated potas- m supplements immediately if abdominal in, distention, nausea, vomiting, or gastro- estinal bleeding occur.

e with caution in pregnant patients, since drug may cross the placental barrier and verse reactions which may occur in the ult (thrombocytopenia, hyperbilirubinemia, ered carbohydrate metabolism, etc.) are tential problems in the newborn.

ecautions: Antihypertensive therapy with groton should always be initiated cau- usly in postsympathectomy patients and patients receiving ganglionic blocking ents or other potent antihypertensive drugs, curare. Reduce dosage of concomitant ihypertensive agents by at least one-half. rbiturates, narcotics or alcohol may po- tiate hypotension. Because of the possi- ity of progression of renal damage, peri- ic determination of the BUN is indicated. continue if the BUN rises or liver dysfunc- n is aggravated. Hepatic coma may be cipitated.

ctrolyte imbalance, sodium and/or potas- m depletion may occur. If potassium deple- n should occur during therapy, Hygroton uld be discontinued and potassium sup- ments given, provided the patient does have marked oliguria.

ke special care in cirrhosis or severe hemic heart disease and in patients re- ving corticosteroids, ACTH, or digitalis. t restriction is not recommended.

verse Reactions: Nausea, gastric irritation, niting, anorexia, constipation and cramp- , dizziness, weakness, restlessness, hy- glycemia, hyperuricemia, headache, mus- cramps, orthostatic hypotension, aplastic mia, leukopenia, thrombocytopenia, anulocytosis, impotence, dysuria, transient opia, skin rashes, urticaria, purpura, nec- izing angiitis, acute gout, and pancreatitis en epigastric pain or unexplained G.I. nptoms develop after prolonged adminis- ion. Other reactions reported with this ss of compounds include: jaundice, xan- psia, paresthesia, and photosensitization.

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The clinical efficacy of Synalar has been extensively documented in the world literature. Commonly encountered diseases such as allergic and contact dermatitis, eczematous and seborrheic dermatitis, and neurodermatitis respond rapidly to Synalar, often where previous therapy with other topical corticosteroids has failed.

Low patient cost for wider usefulness

With Synalar, a high degree of efficacy does not mean high price. And—a small quantity goes a long way. Thus, your patients can often obtain the "economy" of a hydrocortisone preparation with the proved efficacy of a potent, truly advanced steroid.

Synalar
fluocinolone acetonide

Turn page for contraindications, precautions and side effects.

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Synalar® 0.01%

fluocinolone acetonide provides economy in two practical dosage forms

For general use, the most economical and widely applicable concentration of Synalar is 0.01% Cream in a water-washable, vanishing cream base. Synalar Solution 0.01% is especially valuable in dermatoses involving moist, intertriginous areas or hairy sites where creams and ointments do not spread or penetrate readily. Synalar Solution is a unique dosage form—clear, nongreasy, cosmetically elegant.

Product Information

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. *Precautions:* Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. *Side Effects:* Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. *Availability:* Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

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(norethindrone 1mg + mestranol 0.05mg)

Turn page for contraindications, precautions and side effects.

Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incide in patients receiving oral contrace tives: nausea, vomiting, gastroint tinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, ede chloasma or melasma, breast cha (tenderness, enlargement and secretion), change in weight (incre or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when giv immediately postpartum, choles jaundice, migraine, rash (allergic) rise in blood pressure in susceptib individuals, mental depression. Although the following side effec have been reported in users of or contraceptives, no cause and effe relationship has been established anovulation posttreatment, preme struallike syndrome, changes in libido, changes in appetite, cystiti like syndrome, headache, nervou ness, dizziness, fatigue, backache hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, itching. The following occurrence have been observed in users of or contraceptives (a cause and effect relationship has neither been esta lished nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests m be altered by the use of oral contr ceptives: increased sulfobromophthalein and other hepatic funct tests, coagulation tests (increase prothrombin, factors VII, VIII, I and X), thyroid function (increas PBI and butanol extractable prote bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

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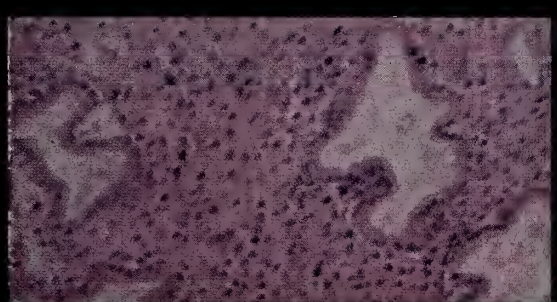
The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

Untreated Patient

Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.

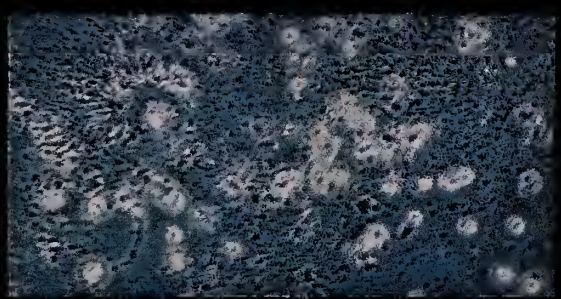
Spermatozoa appear healthy, active, freemoving.



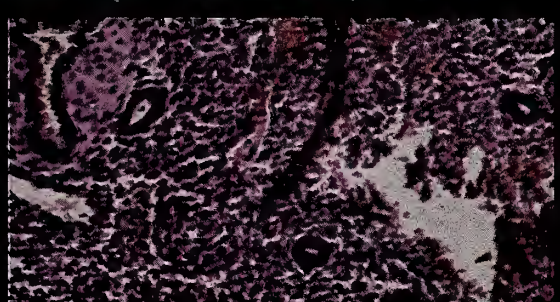
Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

Norinyl-1 Patient

Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



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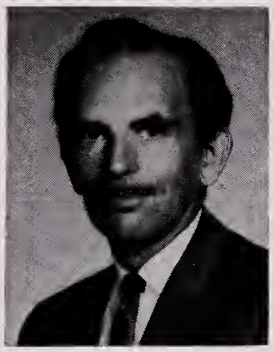

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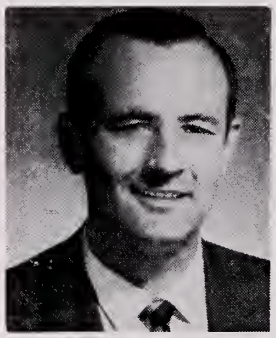

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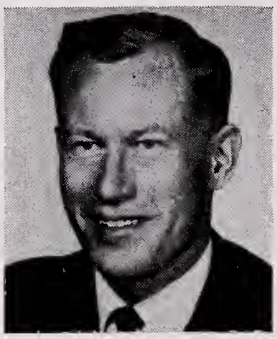

Donald Vassar
Issaquah, Washington
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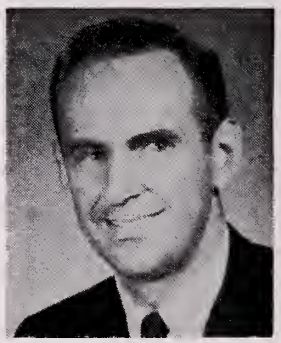

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Vice President: Carl H. McLauthlin, Denver.

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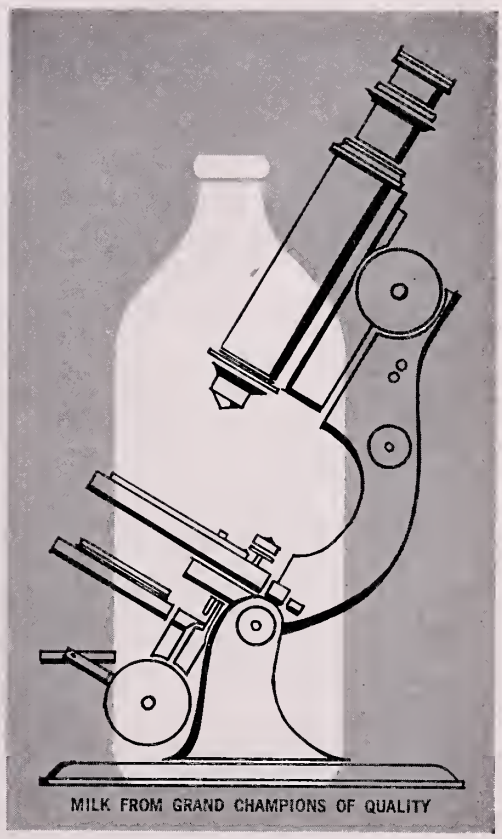

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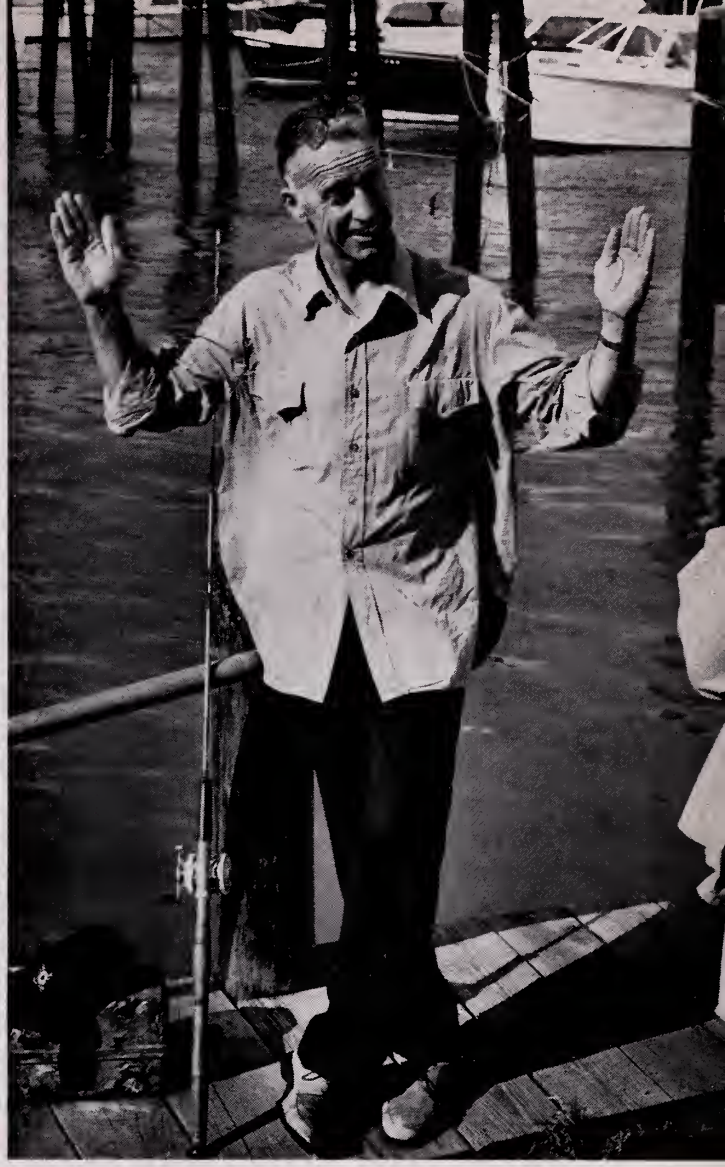
Picture of bursitis



treated with Parafon Forte® TABLETS

Paraflex® (chlorzoxazone)* 250 mg.
Tylenol® (acetaminophen) 300 mg.

Parafon Forte helps to relieve pain, restore mobility . . . stop pain-spasm feedback

Here is why. PARAFON FORTE provides:

a nonsalicylate analgesic equal to aspirin for the relief of pain,[1,2] yet unlikely to produce the irritation to the gastric mucosa so often associated with salicylate therapy[3]

and a skeletal muscle relaxant shown to have up to a 6-hour span of action,[4-6] and to retain effectiveness even on continued administration,[5-7] but which does not have the central effects of tranquilizing compounds.

Prescribe PARAFON FORTE for lasting spasmolysis and analgesia in sprains, strains, myalgias, low back pain, bursitis and other musculoskeletal disorders. Your patients will appreciate the restored comfort and lasting freedom of movement it usually provides.

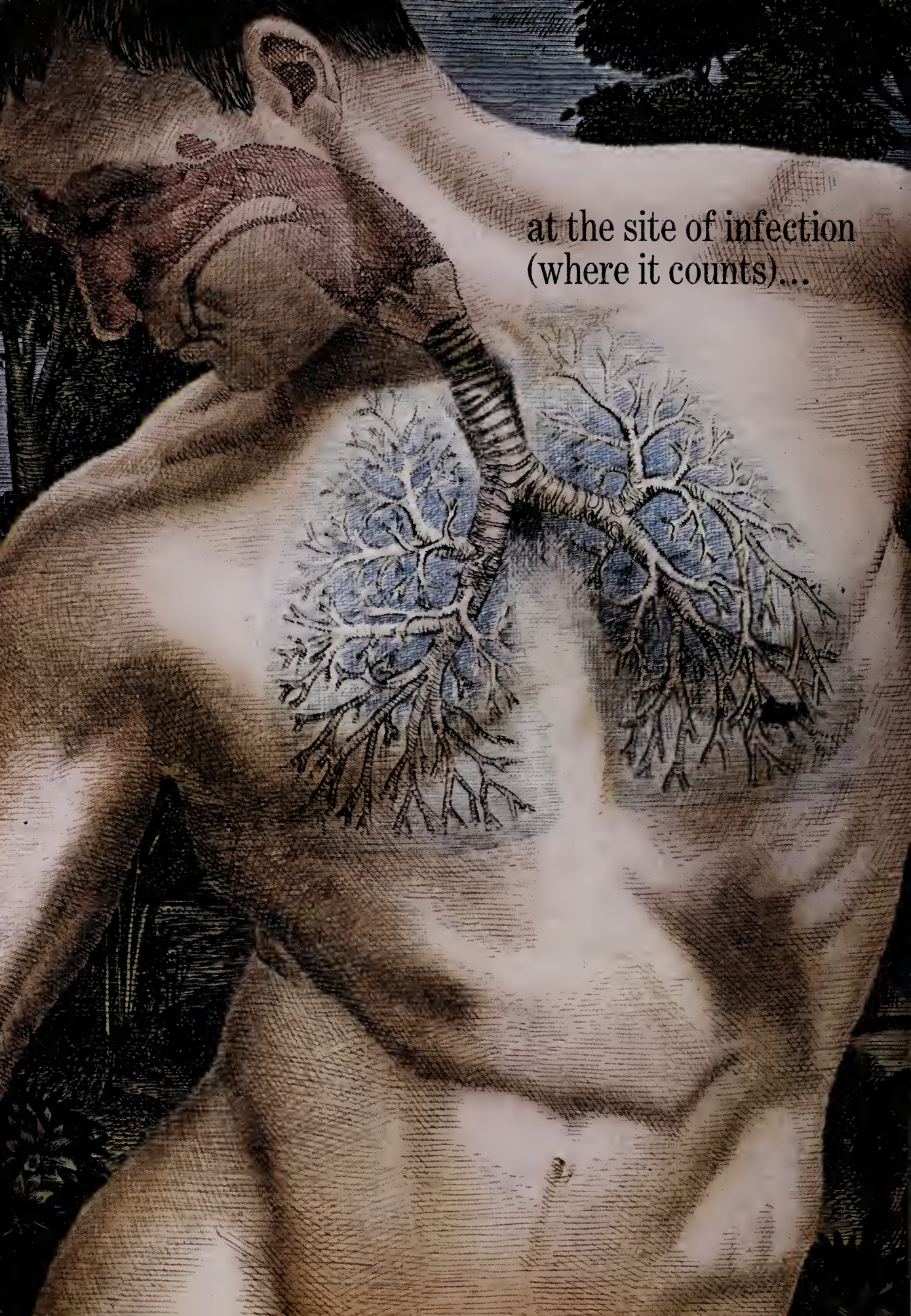
Cautions and side effects: Use with caution in patients with known drug sensitivity. If a hypersensitivity reaction or symptoms suggestive of liver dysfunction are observed, the drug should be stopped. Occasionally, drowsiness, dizziness, lightheadedness, malaise, overstimulation or gastrointestinal disturbances may be noted; rarely gastrointestinal bleeding, allergic skin rashes, petechiae, ecchymoses, angioneurotic edema or anaphylactic reactions may have been drug associated. While *Paraflex* (chlorzoxazone) has been suspected as being the cause of hepatic toxicity in approximately eighteen patients, it was not possible to state that the dysfunction was or was not drug induced. ***Dosage:*** Two tablets q.i.d. ***Supplied:*** Scored, light green tablets, imprinted "McNEIL"—bottles of 100.

References: 1. Batterman, R. C., and Grossman, A. J.: Fed. Proc. *14*:316, 1955. 2. Goodman, L. S., and Gilman, A., ed.: The Pharmacological Basis of Therapeutics, ed. 3, New York, The Macmillan Company, 1965, p. 331. 3. Roth, J. L. A., *et al.*: Gastroenterology *44*:146, 1963. 4. Conney, A. H., and Burns, J. J.: J. Pharmacol. Exp. Ther. *128*:340, 1960. 5. Settel, E.: Clin. Med. *6*:1373, 1959. 6. Berman, H. H., *et al.*: Dis. Nerv. Syst. *25*:430, 1964. 7. Darienzo, C.: Ibid., *27*:189, 1966.

McNEIL

*U S PATENT NO. 2,895,877

McNEIL LABORATORIES, INC., FORT WASHINGTON, PA.


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

701464

Ilosone® Lilly
Erythromycin Estolate

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by micro-organisms sensitive to its action—especially staphylococci, hemolytic streptococci, and pneumococci.

It has been effective in streptococcus infections, particularly acute bacterial pharyngitis and tonsillitis; staphylococcus disease, including soft-tissue infections, furunculosis, abscesses, cellulitis, carbuncles, and wound infections; pneumococcus pneumonia and acute bronchitis with pneumococci on culture, bronchopneumonia, and otitis media.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents; surgical procedures should be performed when indicated, and large doses of the antimicrobial agents should be employed.

Penicillin is the drug of choice for syphilis and gonorrhea, but Ilosone in multiple 500-mg. doses has been useful in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Known history of sensitivity to this drug; preexisting liver disease or dysfunction.

Adverse Reactions: Hepatic dysfunction with or without clinical jaundice has been reported infrequently. Changes in liver function tests indicative of intrahepatic cholestasis appear to be the result of individual idiosyncrasy. Findings subsided when treatment was discontinued. Occasionally, symptoms simulated extrahepatic obstructive jaundice or the colic of biliary tract disease.

When jaundice appeared to be related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Gastro-intestinal disturbances not associated with hepatic effects and occasional allergic manifestations (urticaria, skin eruptions, and, rarely, anaphylaxis) have been reported. The normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Administration and Dosage: Ilosone is administered orally.

Infants and children under twenty-five pounds, 5 mg. per pound every six hours; twenty-five to fifty pounds, 125 mg. every six hours. Adults and children over fifty pounds, 250 mg. every six hours.

For severe infections, double the dosage. When larger doses are indicated, consider parenteral erythromycin therapy. In beta-hemolytic streptococcus infections, maintain treatment for ten days to prevent rheumatic fever or glomerulonephritis.

In syphilis, a total of 20 to 30 Gm. is administered in divided doses for ten to fifteen days. Close follow-up is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examination of spinal fluid is recommended during follow-up.

In gonorrhea, the dosage is 500 mg. four times a day for four days. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics and monthly serologic tests for three months. For detailed information, consult the package literature.

How Supplied: Pulvules® Ilosone, Capsules, N.F., 125 mg.* and 250 mg.*

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg.* per 5-cc. teaspoonful.

Ilosone, 125, for Oral Suspension, N.F., 125 mg.* per 5-cc. teaspoonful.

Ilosone Drops, 5 mg.* per drop.

Tablets Ilosone Chewable, N.F., 125 mg.*

*Base equivalent. [080967]

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964. 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962. 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

701464

When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl®-1.

(norethindrone 1mg. & mestranol 0.05mg.)

Turn page for contraindications, precautions and side effects.

Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incid in patients receiving oral contrac tives: nausea, vomiting, gastroin tinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, ede chloasma or melasma, breast cha (tenderness, enlargement and secretion), change in weight (incr or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when gi immediately postpartum, cholest jaundice, migraine, rash (allergic rise in blood pressure in susceptil individuals, mental depression. Although the following side effec have been reported in users of or contraceptives, no cause and effe relationship has been established anovulation posttreatment, prem struallike syndrome, changes in libido, changes in appetite, cystit like syndrome, headache, nervou ness, dizziness, fatigue, backache hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, itching. The following occurrence have been observed in users of or contraceptives (a cause and effect relationship has neither been esta lished nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests m be altered by the use of oral cont ceptives: increased sulfobromoph thalein and other hepatic funct tests, coagulation tests (increase prothrombin, factors VII, VIII, IX and X), thyroid function (increas PBI and butanol extractable prote bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

norethindrone — an original steroid from

SYNTEX

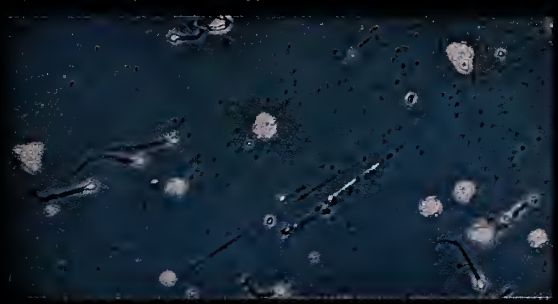
LABORATORIES INC., PALO ALTO, CALIF.

Here's why Norinyl-1 makes medical sense.

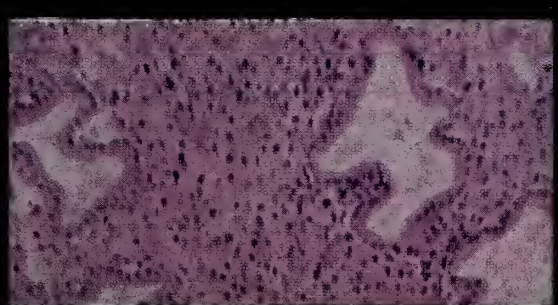
The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

Untreated Patient

Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



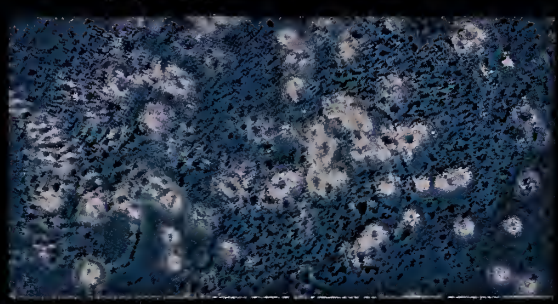
Spermatozoa appear healthy, active, freemoving.



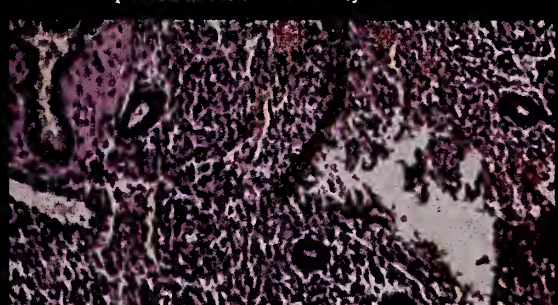
Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

Norinyl-1 Patient

Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



Norethindrone in Norinyl-1 accelerates secretory phase, suppresses glandular and vascular development.

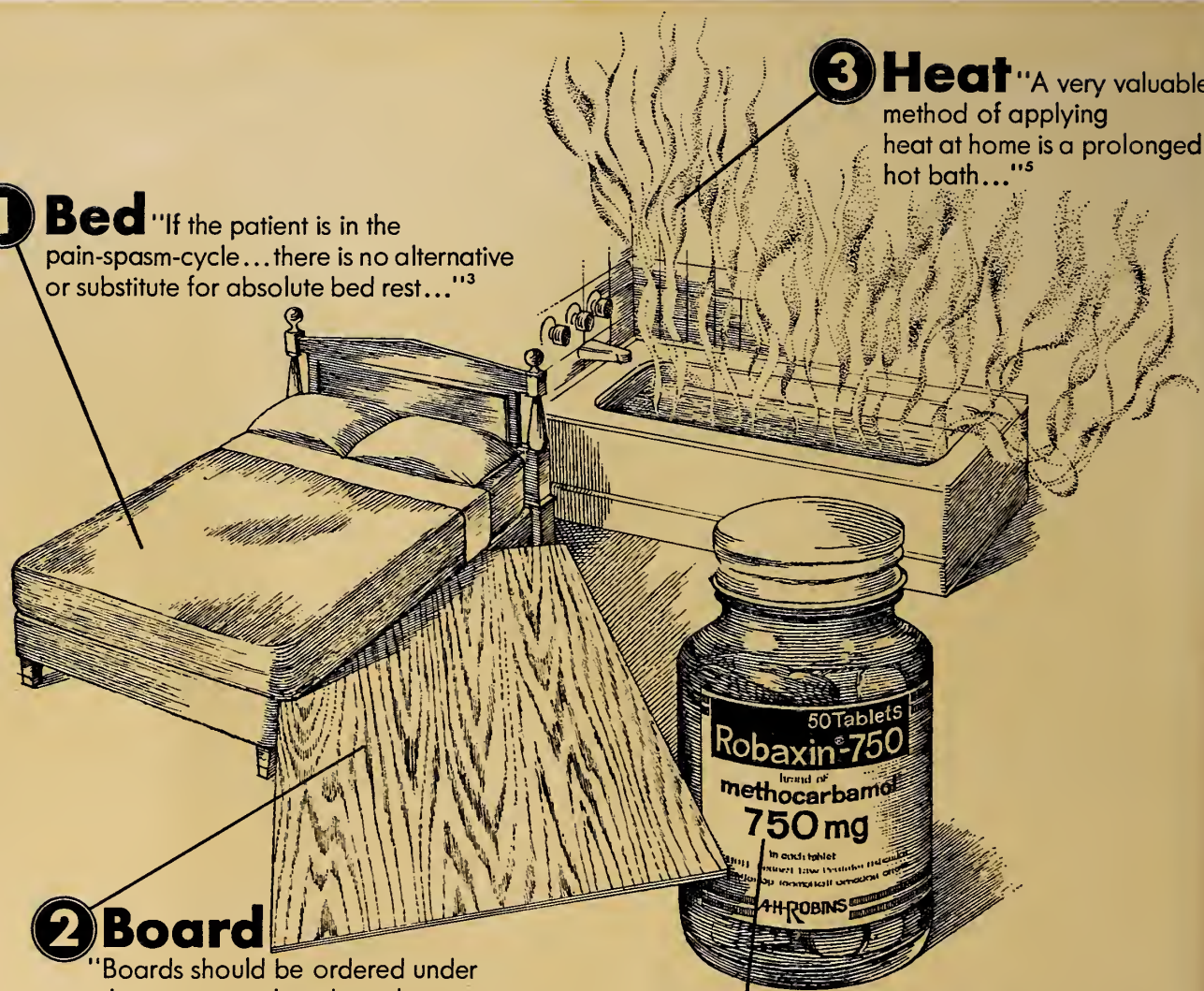
Norinyl®-1
(norethindrone 1mg & mestranol 0.05mg) tablets

- new low dose of time-proved ingredients
- established norethindrone/mestranol ratio
- lower patient cost

LOW-BACK PAIN

A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle spasm. **Contraindicated** in hypersensitive patients. **Side Effects** (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently. See product literature for further details. **Also available:** Robaxin® Tablets (methocarbamol, 500 mg.) Robaxin Injectable (methocarbamol, 1 Gm./10 cc.)

References: (1). Godfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gottschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dakota J. Med. 18:26, 1965. (5). Soto-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopath. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

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If hypothyroidism leaves your patient feeling like this...

consider

LETTER®

(SODIUM LEVOTHYROXINE, ARMOUR) TABLETS

Synthetic Thyroid Replacement Therapy

Letter® provides all the advantages of the synthetically pure chemical sodium levothyroxine. Dosage is precise and potency is consistently uniform.

and

Letter® is micronized to provide maximum opportunity for full absorption and clinical response.

In addition Letter® is distinctively color coded with an identifying number stamped on each tablet to provide accurate dosage control.

Indications: Hypothyroid conditions. **Contraindications:** Thyrotoxicosis, acute myocardial infarctions unless associated with hypothyroidism. In hypothyroidism with hypoadrenalism coadministration of corticoids with LETTER® is recommended. **Precautions and Side Effects:** Excessive dosage may result in diarrhea, cramps, palpitation, nervousness, rapid pulse, sweating. If symptoms appear, discontinue medication for several days, then reinstitute at a lower level. Since myxedema patients with heart disease may suffer seriously from abrupt increases in dosage, caution should be exercised in adjusting dosage. **Dosage:** Generally, the initial adult dosage is 0.1 mg. daily. This may be increased in small increments every one to three weeks until proper metabolic balance is achieved. **Available:** Bottles of 100 tablets, in six potencies: 0.025 mg. (violet), 0.05 mg. (peach), 0.1 mg. (pink), 0.2 mg. (green), 0.3 mg. (yellow), and 0.5 mg. (white).

ARMOUR PHARMACEUTICAL COMPANY • CHICAGO, ILLINOIS

Indications: Hypertension and many types of edema involving retention of salt and water.
Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.
Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.
Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.
Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN i indicated. Discontinue if the BU rises or liver dysfunction is agg vated. Hepatic coma may be pre cipitated.
Electrolyte imbalance, sodium a or potassium depletion may occ If potassium depletion should o cur during therapy, Hygroton should be discontinued and pot sium supplements given, provid the patient does not have marke oliguria.
Take special care in cirrhosis or

For the cardiac patient on 2 pillows a night, consider one Hygroton a day.

She was the picture of arteriosclerotic heart disease in failure.
She couldn't sleep a wink without an extra pillow.
Then her doctor prescribed digitalis and Hygroton.

First, her cardiac output improved.
Then her breathing improved—along with her urinary output.

Nights could be a lot more pleasant for patients like this in your practice.
Try it and see.

Hygroton therapy may also mean troublesome side effects for certain patients.
A summary of essential prescribing information is shown below.

Hygroton®
chlorthalidone

new 50 mg. tablet
or 100 mg. tablet

evere ischemic heart disease and
n patients receiving corticoste-
oids, ACTH, or digitalis. Salt re-
triction is not recommended.
dverse Reactions: Nausea, gastric
rritation, vomiting, anorexia, con-
tipation and cramping, dizziness,
veakness, restlessness, hyperglyc-
emia, hyperuricemia, headache,
nuscle cramps, orthostatic hypo-
ension, aplastic anemia, leuko-
enia, thrombocytopenia, agranu-
ocytosis, impotence, dysuria,
ansient myopia, skin rashes, urti-
caria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.
Average Dosage: 50 or 100 mg. with breakfast daily or 100 mg. every other day.
Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000.
(B)R46-230-D
For full details, please see the complete prescribing information.

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York 10502
HY-5405S

Against these three major pathogens...

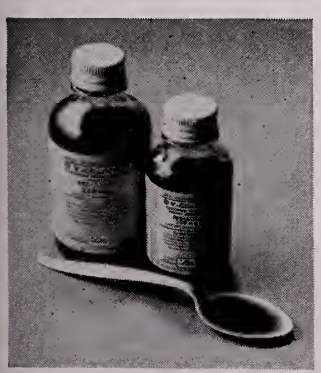
V-Cillin K® provides dependable oral antibacterial therapy

because it combines a high degree of activity...

V-Cillin K has been shown to be effective in the treatment of streptococcus and pneumococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy in patients with a history of rheumatic fever or congenital heart disease.

with high blood levels, even when taken with food

V-Cillin K is stable in acid and immediately soluble. High serum levels, therefore, are reached rapidly. Because it is acid stable, V-Cillin K is well absorbed even when taken close to mealtime. These desirable properties help make V-Cillin K a dependable penicillin for oral use.



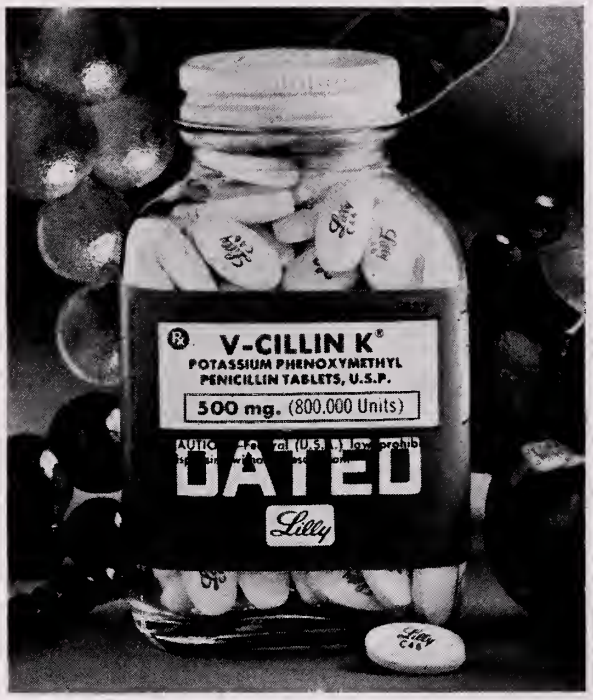
V-Cillin K® Lilly 701449

Potassium Phenoxymethyl Penicillin

Now available: V-Cillin K®, Pediatric, for Oral Solution, 250 mg. (400,000 units) per 5 cc. of solution.

(See next page for prescribing information.)

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K, the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly), combines acid stability with immediate solubility and rapid absorption. Higher, more rapid serum levels are obtained than with equal oral doses of penicillin G.

Indications: Streptococcus, pneumococcus, and gonococcus infections; infections caused by sensitive strains of staphylococci; prophylaxis of streptococcus infections in patients with a history of rheumatic fever; and prevention of bacterial endocarditis after tonsillectomy and tooth extraction in patients with a history of rheumatic fever or congenital heart disease.

Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

701449

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

**a potent injectable non-narcotic—
may be used in place of morphine
and other narcotic analgesics**

A breakthrough in the control of pain

Talwin®

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pentazocine

(as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Talwin 30 mg. relieves pain usually as quickly and effectively as morphine 10 mg.*

whatever the intensity of the pain

whatever the cause of the pain

whatever the site† of the pain

whatever the chronicity of the pain

whatever the age†† of the patient

without the liability of narcotics

without the development of tolerance on prolonged use

with less risk of severe respiratory depression than with morphine

with less constipation

with less urinary retention

Clinical experience of more than 150 investigator with over 12,000 patients given varying dosages c Talwin shows that this potent injectable analgesi is not a narcotic.

Talwin has less risk of severe respiratory depres sion, urinary retention, and constipation than mor phine—a great boon for postsurgical patients.

Talwin produces less nausea, vomiting and dia phoresis than meperidine.

Constipation and urinary retention are seldom problem with Talwin.

Very rarely do hallucinations or disorientation oc cur (0.1% each).

No significant hepatic, renal, hematopoietic or neu rologic disturbances have been reported.

Talwin is well tolerated even by the aged or very i patients.

Used during active labor, its tolerance by th mother and newborn is comparable to meperi dine's. As with all new drugs, Talwin should be use with caution in pregnant women and in women de livering premature infants.

Tolerance to the analgesic effect of Talwin has nc developed with prolonged use.

Talwin gives significant relief of pain in from 15 t 20 minutes following I.M. or S.C. injection.

Talwin relieves pain usually for 3 hours or longe with a single injection; however, the duration ma sometimes be less than with morphine.

*Its duration of action may sometimes be less than that of morphine.

†Should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.

††Until sufficient experience is gained, Talwin should not be administered to children under 12 years of age.

86 per cent of medical and surgical patients obtained excellent to good relief with Talwin 30 mg. administered parenterally

Talwin

brand of pentazocine (as lactate)

used for pain of all types

Talwin has a wide range of usefulness in surgery

Types of surgical use	Number of patients	Efficacy				
		% Exc.	% Good	Exc. + Good	% Fair	% Poor
Preoperative	118	31	52	83%	15	2
Postoperative	914	58	28	86%	8	6
Pre- and postoperative	12	75	17	92%	0	8
Minor surgery	33	30	39	69%	0	31*
Traumatic	14	64	29	93%	7	0
Dental	33	67	24	91%	3	6
Total patients.....1124						

Efficacy of 30 mg. Talwin I.M. and S.C. as related to types of surgical use in a cooperative study

Data in files of Department of Medical Research, Winthrop Laboratories.

*High incidence of poor results in minor surgery is due primarily to one study involving change of burn dressings in children; 9 of 19 patients obtained poor results with dose used.

Talwin relieves all types of pain in acute and chronic medical disorders

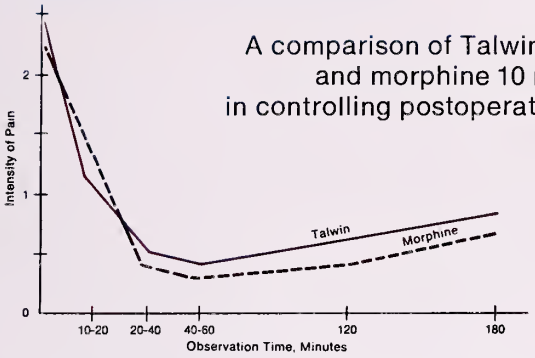
Type of medical pain	Number of patients	Percentage of relief				
		Excellent	Good	Exc. + Good	Fair	Poor
Malignancy, pain in	161	44	37	81%	8	11
Orthopedic; see also "Arthritis"	111	53	38	91%	5	4
Cardiovascular pain; see also "Miscellaneous medical"	96	59	27	86%	6	7
Genitourinary pain	83	42	33	75%	16	10
Arthritis	76	33	51	84%	12	4
Gynecologic pain	35	57	34	91%	6	3
Cephalalgia	21	45	41	86%	9	5
Gastrointestinal pain	19	89	5	94%	0	5
Chest, including • Pleurisy • Pulmonary embolism and infarct • Lung abscess	12	83	17	100%	0	0
Miscellaneous medical, including • Peripheral vascular disease • Thrombophlebitis • Cervical root pain • Facial neuralgia • Syringomyelia • Burns	108	50	39	89%	9	2
Total patients.....722						

Efficacy of 30 mg. Talwin I.M. and S.C. as related to types of medical pain in a cooperative study

Data in files of Department of Medical Research, Winthrop Laboratories.

See next page for additional product information

Talwin relieves pain as quickly as morphine



A comparison of Talwin 30 mg. and morphine 10 mg. I.M. in controlling postoperative pain*

Figure 1.

Talwin 30 mg. proved equivalent to morphine 10 mg. in overall analgesic efficacy. During the early post-medication period (up to 40 minutes after drug injection), Talwin was superior in effect to morphine.

After observation periods ranging from 40 to 180 minutes there was no difference between the drugs in their effect on intensity. There were 141 and 119 complete patient records for Talwin and morphine, respectively, in this double-blind study. Other clinical investigators, studying duration, state that relief with Talwin may be obtained for up to three hours or longer, a period sometimes less than morphine's.

Talwin is as effective for severe pain (Fig. 2)† as for moderate pain (Fig. 3)†

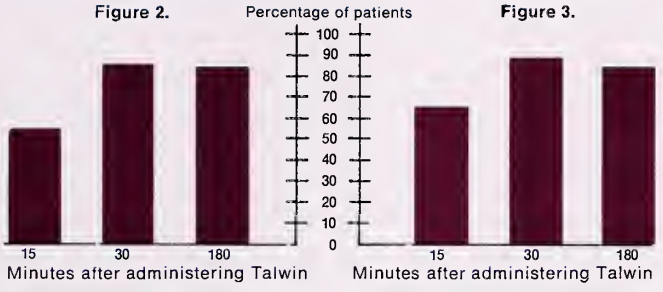


Figure 2. Per cent excellent to good relief of severe pain obtained with 30 mg. Talwin in 218 postoperative patients

Figure 3. Per cent excellent to good relief of moderate pain obtained with 30 mg. Talwin in 203 postoperative patients

Talwin does not require a narcotics prescription or narcotics records

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "...there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally."‡

*Storer, E. H.: Data in the files of the Sterling-Winthrop Research Institute.

†Cooperative study, data in the files of the Department of Medical Research, Winthrop Laboratories.

‡*World Health Organization Technical Report Series*, No. 343, 1966, p. 6.

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Contraindications: *Increased Intracranial Pressure, Head Injury, or Pathologic Brain Conditions in which clouding of sensorium is undesirable.* Talwin (brand of pentazocine) should not be administered in these cases, since drug-induced sedation, dizziness, nausea, or respiratory depression could be misleading.

Precautions: *Pregnancy.* No teratogenic or embryotoxic effects attributable to the use of Talwin have been seen in extensive reproductive studies in animals; however, like all new drugs, Talwin should be given with caution to pregnant women. A large number of patients in labor have received the drug with no adverse reactions other than those that occur with commonly used strong analgesics. However, as with other strong analgesics, Talwin should be used with caution in women delivering premature infants.

Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.

Certain Respiratory Conditions. The possibility that Talwin (brand of pentazocine) may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.

Patients Dependent on Narcotics. Because Talwin is a narcotic-antagonist, patients dependent on narcotics and receiving Talwin may occasionally experience certain withdrawal symptoms. Talwin should be given with special caution to such patients. It has been observed that some patients previously given narcotic-analgesics for one month or longer had mild withdrawal symptoms when the drug was replaced with the analgesic, Talwin. After a short period of adjustment the subjects were usually able and willing to continue taking Talwin, and relief of pain was satisfactory.

Nonaddicted Patients Receiving Narcotics. Symptoms believed to be indicative of antagonism to the opiate may be observed rarely with administration of Talwin to patients receiving opiates for a short time. Intolerance or untoward reactions are seldom observed after administration of Talwin to patients who have received single doses or who have had limited exposure to narcotics.

Impaired Renal or Hepatic Function. Although laboratory tests have not indicated that Talwin (brand of pentazocine) causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.

Myocardial Infarction. As with all drugs, Talwin (brand of pentazocine) should be used with caution in patients with myocardial infarction who have nausea or vomiting.

Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.

Adverse Effects: Talwin is relatively free from the undesirable si effects associated with morphine, such as constipation, urinary rete tion, or severe respiratory depression. Furthermore, Talwin produc less nausea, vomiting, and diaphoresis than meperidine.

In over 12,000 patients who received Talwin intramuscularly, subcut neously, or intravenously, nausea, the most frequent adverse effe occurred in approximately 5.0 per cent. In decreasing order of c currence were vertigo, dizziness or lightheadedness; vomiting; a euphoria. Respiratory depression was reported as an adverse reacti in 1.0 per cent.

The incidence of each of the other adverse effects was well belc 1.0 per cent: constipation, circulatory depression, diaphoresis, urina retention, alteration in mood (nervousness, apprehension, depressic floating feeling), hypertension, sting on injection, headache, d mouth, flushed skin including plethora, altered uterine contractio during labor, dermatitis including pruritus, dreams, paresthesia, a dyspnea occurred rarely after administration of Talwin (brand of pe tazocine). Furthermore, each of the following adverse reactions o curred in less than 0.1 per cent: tachycardia, visual disturban (blurred vision, diplopia and nystagmus), hallucinations, disorient tion, weakness or faintness, muscle tremor, chills, allergic reactio including edema of the face, taste alteration, insomnia, diarrhe cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adu (never apnea), even with large amounts. A small number of newbo infants whose mothers received Talwin during labor had transie apnea. The incidence of temporary diminution in the rate or streng of uterine contractions is low after administration of Talwin, simil to that following meperidine hydrochloride. (In reporting no interf ence with normal labor in patients receiving Talwin, one investigat further stated that the drug may increase uterine activity.) General no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have r vealed no significant abnormalities. A minimum and probably insigni cant increase in the per cent of eosinophils in peripheral blo counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Excluding Patients in Labor.* Ave age recommended single parenteral dose is 30 mg., by intramuscul subcutaneous, or intravenous route; may be repeated every three four hours. Pain has been relieved in most patients with not mo than three doses daily. Infrequently, selected patients have receiv single doses as high as 60 mg.

Patients in Labor. A single, intramuscular 30 mg. dose has been mo commonly administered. An intravenous 20 mg. dose has given ad quate pain relief to some patients in labor when contractions becor regular, and this dose may be given two or three times at two- three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in childr under twelve years of age is limited, the use of Talwin (brand of pe tazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talw for prolonged periods (e.g., over 300 days) experienced no wit drawal symptoms even when administration was stopped abrupt furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with s uble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has r produced apnea or severe respiratory embarrassment in adults, ev in large doses. Occasionally, however, moderate respiratory depre sion may occur. Means of maintaining proper oxygenation should available in case of overdosage or respiratory depression, and meth phenidate (Ritalin®) should be administered parenterally. The usu narcotic-antagonists, such as nalorphine, are not effective respirat stimulants for depression due to Talwin.

How Supplied: Ampuls of 1 ml., containing Talwin® (pentazocine) lactate equivalent to 30 mg. base and 2.8 mg. sodium chloride, Water for Injection. **Boxes of 10, 25, and 100.**

Multiple dose vials of 10 ml., each 1 ml. containing Talwin® (pentaz cine) as lactate equivalent to 30 mg. base, 2 mg. acetone sodiu bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as p servative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lac acid and sodium hydroxide.

Winthrop

Winthrop Laboratories, New York, N.Y. 10016

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"Man's best friend" in wintertime diarrheas

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ufferers from both diarrhea and
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aolin and pectin *plus* belladonna
kaloids (as in Donnatal®).
onnagel treats the whole diarrhea problem. Available on your prescription or recommendation.

For acute, non-specific diarrheas
Donnagel® -PG (Donnagel with paregoric equivalent).
Donnagel formula plus powdered opium, USP, 24.0 mg. (equivalent to paregoric 6 ml.) (warning: may be habit forming). Alcohol, 5%.

All the antidiarrheal benefits of paregoric without the unpleasant taste. Real banana flavor makes it acceptable, even to children.
See product literature before prescribing.
A. H. Robins Company
Richmond, Va. 23220

A·H·ROBINS

CLEAR THE TRACT!

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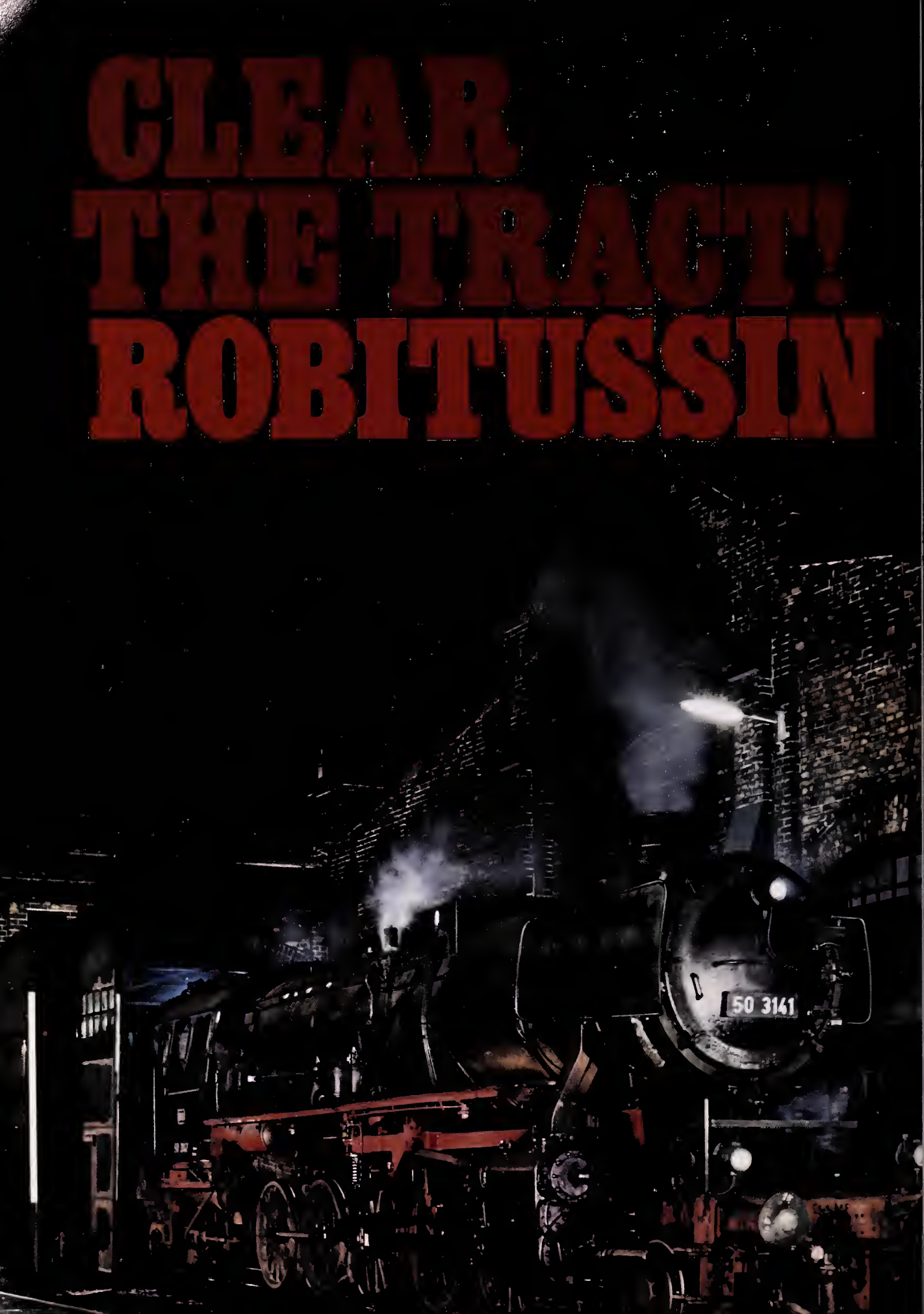

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Alcohol, 3.5%

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Each 5 cc. contains:
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Pheniramine maleate . . . . . 7.5 mg.
Codeine phosphate . . . . . 10.0 mg.
(warning: may be habit forming)
Alcohol, 3.5%

Non-narcotic for 6-8 hour cough control
ROBITUSSIN®-DM
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
Dextromethorphan hydrobromide . 15.0 mg.
Alcohol, 1.4%

New! Clears sinuses and nasal stuffiness as it relieves cough
ROBITUSSIN®-PE
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
Phenylephrine hydrochloride . . . 10.0 mg.
Alcohol, 1.4%

	ROBITUSSIN	ROBITUSSIN A-C	ROBITUSSIN-DM	ROBITUSSIN-PE
EXPECTORANT	●	●	●	●
DEMULCENT	●	●	●	●
COUGH SUPPRESSANT		●	●	
ANTIHISTAMINE		●		
LONG-ACTING (6-8 HOURS)			●	
NASAL, SINUS DECONGESTANT				●

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I decided it was time for you, Doc."

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Relief of hyperacidity is still a primary goal in the treatment of peptic ulcer. And antacids are the most widely used means of achieving this relief. But antacids alone cannot influence the distention and bloating which so often add to ulcer distress.

THIS IS WHY MYLANTA® PROVIDES:

the two most widely used antacids—magnesium and aluminum hydroxides—to help secure rapid acid neutralization with little chance of laxation or constipation;

PLUS

the defoaming action of simethicone—to help relieve the painful gas symptoms which often accompany peptic ulcer.

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antacid therapy plus an added benefit

nonfatiguing flavor/smooth pleasant texture; both assure patient cooperation during long-term therapy.

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Before prescribing, see complete prescribing information in SK&F literature or *PDR.* A brief precautionary statement follows.
Contraindications: Glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal obstruction, or bladder neck obstruction.
Precautions: Use cautiously in the presence of hypertension, hyperthyroidism, coronary artery disease; warn vehicle or machine operators of possible drowsiness.
Usage in Pregnancy: Use cautiously, especially in the first trimester. *Note:* The iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake; discontinue 'Ornade' one week before these tests.
Adverse Reactions: Drowsiness; excessive dryness of nose, throat or mouth; nervousness; insomnia. Other known possible side effects of the individual ingredients: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, difficulty in urination. Thrombocytopenia, leukopenia and convulsions have been reported but no causal relationship has been established.

a stuffy nose is no laughing matter

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Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

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brand of sustained release capsules

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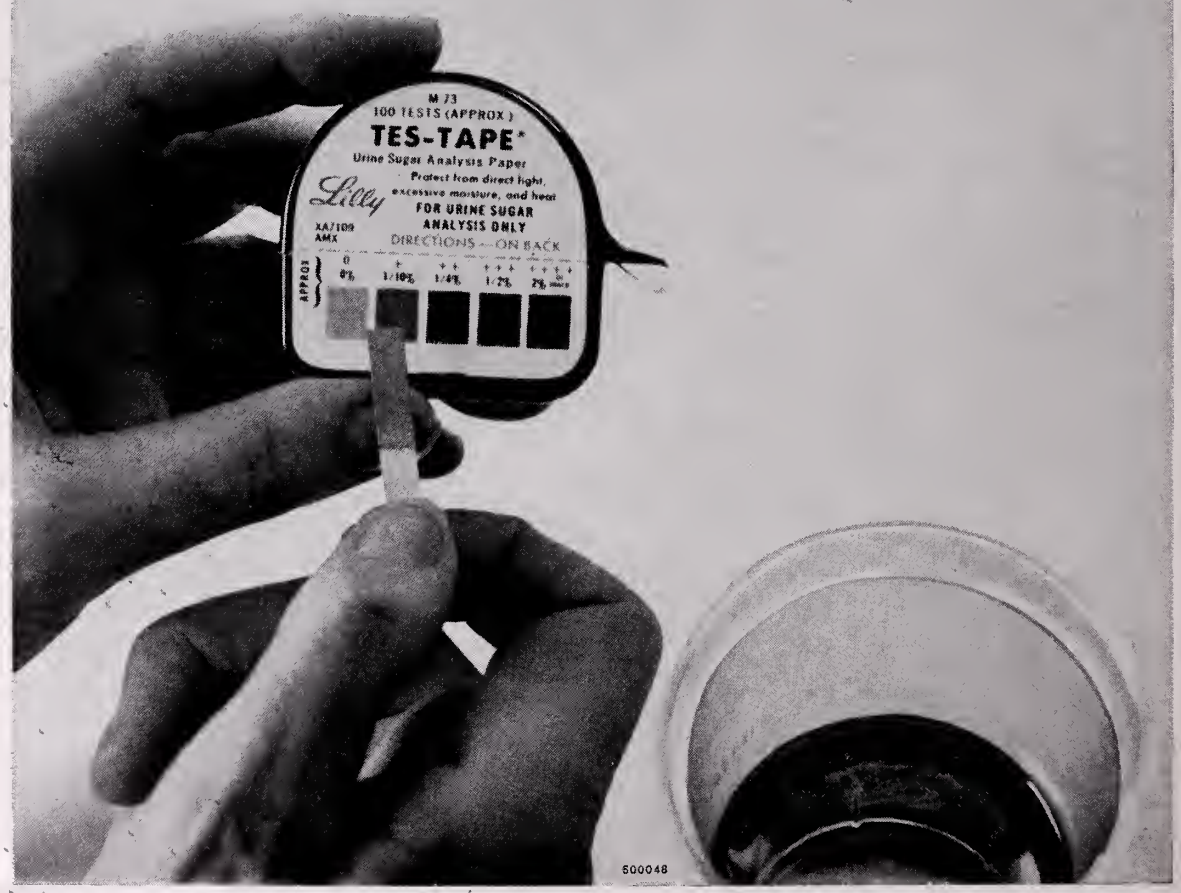
tear, moisten, compare–that's all!



MANY believe that our times are different from the past, that our events are peculiar to today, that our efforts and aspirations are new and unrelated to those of our heritage. What was happening one hundred years ago?

Ring Out The Old!

In 1867 a new hospital opened at Fort Union, a military post in northern New Mexico, and it was recorded[1] that it had "an inadequate detail of nurses." That same year, in Richmond, Virginia, Negroes marched through the streets determined to have equal rights on street cars, and a riot developed in which troops were necessary.[2] That same year, in Vietnam, a war was going on in an effort to expel the French. Activities and motivations are the same as they were a century ago. Our methods and mechanisms to achieve these aspirations have improved, but the problems of the day are the same as of the past century—and of times even before that.

So it seems appropriate to ask the question, "Have we made any progress?" Certain contemporary thinkers feel that we have not. They claim that the last few hundred years of western civilization have produced only an unending list of military adventures, a decline in the human spirit, an absorption in material things, and an apathy toward the humanities. They do grant that there have been technologic gains, but that these have brought us to the brink.

Each man can only judge from what he reads or hears, and from what he himself knows. In medicine, I know that we have moved forward in our attempt to improve the lot of the individual member of society. It is true that many spectacular advances result from an improved technology, such as the procurement of disease-specific antibiotics, development of organ-specific diagnostic tests and evolvement of fantastic surgical procedures. However, other advances have been at a humanitarian level, and these have resulted in vast improvement in the efficacy and accessibility of medical care. There has been a concomitant advance in medical education. At the same time there has been a move backwards. Complications of treatment and iatrogenic disorders have increased. Costs of medical care keep rising. Communication channels are cluttered. It would seem that in medical practice, we move one rung up the ladder, and then back half a step. But the continued forward progress becomes a certainty when today one sees a patient recover with routine management from a disease that would have been fatal thirty years ago.

Could the interrupted forward movement of medicine also be true in other disciplines and social sciences? I think so. Review of life of the 16th to 19th centuries, as described by great writers of the time, leads to this conclusion. The reformation in life produced by the industrial revolution, and its social and humanitarian movements, has led to an incomparable standard of living, and an improvement in health and longevity unimaginable even a hundred years ago. These improvements will eventually similarly affect the lives of the residents of the present underdeveloped countries. Surely, during this time, there have been major regressive steps such as wars, concentration camps, purges, political corruption, and inquisitions—but there is no comparison possible of the world as it is today and what it was in the entire past of documented history.

If this is a valid thesis, then the promise for the future is great, and those in our society who have decided to secede from it, on the basis of their shallow summations of the present declines, are terribly ignorant of the stream of history. We have moved morally and ethically forward for the last two thousand years. Occasionally the stream has been diverted and dammed, but, like Old Man River, it keeps on moving. So, we offer this optimistic greeting at this time of year —Merry Christmas and A Happy New Year.

Marcus J. Smith, M.D.
Scientific Editor for New Mexico

REFERENCES

[1] Emmet, C.: Fort Union and the Winning of the West. Univ. of Oklahoma Press, Norman, Oklahoma, 1965, p. 334.

[2] Bowers, C. G.: The Tragic Era. Houghton Mifflin Co., Boston, Sentry Edition 1962, p. 201.

*Free Choice Of What?**

We are continually puzzled by many instances in which we see perversion of the meaning of "free choice of physician"—a concept upon which the American Medical Association has always placed primary emphasis. For example, most of the crank calls and letters we receive after revocation of a physician's license, no matter how heinous his crimes, emphasize that the board had no right to take such an action because it interferes with the "free choice" of the patient.

Since the beginning of time charlatans have preyed upon a gullible public, and even in these enlightened days of universal education they continue to do so. Some people contend that certain quacks, if they do no physical harm to people, might help them when medicine has nothing to offer. Moreover, they argue that the victim should have complete freedom to consult whichever quack he chooses. Unrecognized is the duty of the authorities to protect people against their own impulses in this matter, just as it is the function of public health officers to prevent them from drinking contaminated water.

More complicated is the extension of the doctrine of "free choice" to certain cultists who, through legislative channels, have attained a certain veneer of learning and respectability and who now almost universally take advantage of the false label, "doctor."

The efforts of the chiropractors to broaden the scope of their activities continue and their latest strategy is to try to obtain approval for the treatment of patients under the Medicare program. This and all future attempts must be vigorously opposed by the medical profession as was emphasized by Dr. Sabatier, chairman of the AMA Committee on Quackery in his letter to the editor in the August *Bulletin*.

Recently Doyle Taylor, Director of the AMA Department of Investigation, kindly sent us a packet of information about chiropractic with a letter asking whether or not we thought this deserved wider dissemination to boards of medical examiners and state medical societies. Our answer was an emphatic "yes" as it contains a wealth of factual material, some of which would make amusing reading if it weren't potentially so tragic. For example, the following treatment of heart disease is set forth in a textbook published in 1947 and still used in chiropractic schools: "Careful circular finger tip manipulation over the precordium results in a definite relaxation of the coronary arteries and has been advocated in the treatment of angina and other conditions."

Let us redefine the doctrine of "free choice" to the people who are best able to halt the march of cultism—the legislators. Meanwhile the AMA has already demonstrated its willingness to help state societies fight their legislative battles to protect the public against too much "free choice."

R. C. Derbyshire, M.D.

*Adapted from an editorial in the Federation Bulletin, September 1967, 54:289-290, and reprinted with permission.

Errors in Diagnostic Radiology—A New Book Upon the Subject

We are pleased and proud that the scientific editor for the New Mexico section of the Rocky Mountain Medical Journal, Dr. Marcus J. Smith of Santa Fe, is the author of a new book upon the subject of diagnostic radiology. Its title is "Error and Variation in Diagnostic Radiology." The publisher is Charles C. Thomas, Springfield, Illinois. Our readers are familiar with the attractive feature "Shadow or Substance" in this Journal prepared and edited by Dr. Smith. It has been most favorably accepted.

Knowing, as we all do, the teaching value of errors and variations which inevitably occur in every type of practice, we admire the courage and originality of an author who prepares a text based upon investigation and tabulation of their occurrence. He classifies the causes of error into six categories: complacency, faulty reasoning, lack of knowledge, under-rating, poor communication, and unknown causes. Thus, ways and means of avoiding them are pointed up.

Again, we are proud that this studious author is a member of our editorial staff. We believe that the book of 208 pages will fill a great need in his own and related specialties.

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DON'T BE LULLED BY RELATIVE LACK OF FLU LAST WINTER. THIS WINTER BE PREPARED: WHEN THE COMPLAINTS ARE COUGH AND CONGESTION, YOU CAN RELIEVE THESE SYMPTOMS WITH TUSSAGESIC TABLETS. ONE TIMED-RELEASE TABLET AT MORNING, MIDAFTERNOON AND BEDTIME BRINGS UP TO 24 HOURS' RELIEF FROM TROUBLESOME COUGH AND STUFFED AND RUNNY NOSE. TUSSAGESIC IS THE FAMOUS TRIAMINIC FORMULA, PLUS THREE OTHER PROVED CONSTITUENTS. MAKES PATIENTS MORE COMFORTABLE. FAST. ASK YOUR DORSEY REPRESENTATIVE FOR SUPPLY OF STARTER SAMPLES, OR IF FLU IS ALREADY EPIDEMIC, PHONE COLLECT. SEE BELOW.

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Dosage: Adults--1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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Biography of a society

Stuart W. Adler, MD, Albuquerque, New Mexico

Preface

The history of an organization is derived from written records and from verbal narratives about involved individuals. Unfortunately, records of the Bernalillo County Medical Association for its first 24 years of existence are either referred to as "lost," "whereabouts temporarily unknown," or as "sketchy bits." In order to build our history to at least the year 1918, it has been necessary to piece together "the bits." Fortunately, records of the State Medical Society are remarkably well preserved and make fascinating reading. Membership lists are probably complete. At the county level, we have to depend in large part on the city directories, commercial biographies, old phone books, the memory of old timers, and conventional sources.

The River Made The Difference

There were Indians living in what is now Bernalillo County long before written history. Recent estimates assure us that there were many red men living where Albuquerque now stands. These Indians had their Medicine Men who possessed a sort of magic and some practical understanding of what was needed by the sick among them, although they would not have been able to qualify for membership in our County Medical Society. Between the coming of the first white men, the Spaniards in 1540, and the beginning of formal banding together of physicians practicing in or close to Albuquerque, there was a span of more than 250 years. During that interval, the church fathers did most of the healing.

Soon after 1700, Spanish military surgeons stopped at Old Town, the first settlement of Albuquerque. The little village had been named Alburquerque by the settlers who swore allegiance to the King of Spain through the 2nd Duke of Alburquerque, then the Spanish viceroy in Mexico. This was in 1706 and our present state was then a province of Spain—known later as Nuevo Mexico.

In 1804, an extraordinary landmark in public health was accomplished here by Spanish Army surgeons and Spanish soldiers. In 1779 in England, Edward Jenner had discovered cowpox vaccination for modifying or preventing small pox. England was slow to accept the benefits of Jenner's discovery, but its value was quickly recognized by several European countries, including Spain. The Spanish King sent a medico-military expedition to carry the "pus" of cowpox, or vaccine, through all the Spanish possessions in the new world. The expedition started in 1803 and succeeded beyond all expectations. Perhaps this effort in public health was the last evidence of greatness in the old Spanish realm.

It is amazing that by 1804, general vaccination against smallpox was being carried on in Nuevo Mexico at the same time it was being introduced in cities along the Atlantic coast. Spanish military surgeons, who had always traveled up the Rio Grande with the troops, had been ordered to bring six to eight soldiers' sons along with them. These children were vaccinated in sequence to keep alive the cowpox virus. They provided the reservoir of lymph to vaccinate all children in Nuevo Mexico villages, and in addition, any adults who did not have pockmarks on their faces. The villa de Alburquerque had to be abandoned three times in the 1700's, twice from Indian attacks and the third time because of an epidemic of virulent smallpox. Military surgeons reported in 1805 that of

a total population of 6,900 in Nuevo Mexico, less than one-third, all children, had not had smallpox. There was no report on the number of children who had died before they reached age twelve. There was only one stumbling block to this ordered public health program and that was, ever-present epidemics of measles. It was believed useless to vaccinate a person in the presence of measles.

After 1846, Old Town still had military surgeons stationed there, but they were now with American soldiers. New Mexico Territory that year had become part of the United States after federal troops under General Kearney fought a successful war against Mexico. Army doctors also helped with urgent civilian needs. As it had always been, there were native "curanderas" (actually mid-wives) who cared for any illness by use of time-honored home remedies.

Peaceful living in Albuquerque was soon disrupted by the War between the States. A civilian physician in old Albuquerque, Dr. D. Camden de Leon, joined the Confederate Medical Corps in 1861. After the war, he spent a year in post-graduate study in Europe and in 1869 returned to Albuquerque to resume private practice for three years. He then went to Santa Fe where for years he was physician for a territory 200 miles square. Dr. Henry Connelly was the Territorial Governor during the Civil War years having been appointed by President Lincoln. His home was in Peralta across the river from Los Lunas. He received a medical degree in Lexington, Kentucky, in 1823, and he practiced in that state before coming west. He was a very wealthy man, but nothing is known that indicates he practiced his profession in New Mexico.

After the Civil War, commerce and immigration to Albuquerque increased. In the decade of the 70's, a young man named John Symington arrived in Old Town as a mule driver with a wagon train. He had taken the job just for the zest of adventurous living, but when he decided to stay in New Mexico, he declared his training in medicine and married the well-educated daughter of a prominent Spanish family. They went to Santa Fe where he established a practice. Some fifteen years later, in 1887, he was one of the first members of the New Mexico Territorial Medical Society.

About this time, there were three civilian doctors in Old Town; Dr. Russ, Dr. Muhl, and Dr. James Wroth. Ten years later, Dr. Wroth had become one of the best known physicians in the Territory, but in Old Town he was known chiefly as physician for the Convent of the newly arrived Sisters of Charity, who had been sent by Archbishop Lamy to establish a school and to care for the sick. A two-story adobe building was constructed on the west side of San Felipé Church. (It is still there.) Sister Blandina, who was in charge, had helped build St. Vincent Hospital in Santa Fe, at that time the only hospital in the Territory. The building in Old Town became a Convent for the Sisters and, on the ground floor, an infirmary and emergency quarters for anyone in need. Sister Blandina promptly put serious cases on the Santa Fe Railroad day coach and took them to St. Vincent's Hospital in Santa Fe. She had a permanent railroad pass, which read "Sister Blandina and one other," issued to her by the Santa Fe in gratitude for the care given at St. Vincent to the sick and injured among the railroad work crews laying tracks across New Mexico Territory.

In Bernalillo, Dr. Henry Hoyt arrived in 1879. He had not yet completed his medical training, (a common situation among doctors of these times), but he had been "grubstaked" by a drug store in Las Vegas to $2,000 worth of drugs. The deal called for 12 per cent interest and a 50-50 split of the profits. His highly entertaining autobiography recounts his experiences in Bernalillo. Shortly after his arrival, he was asked to care for one of the prominent Dons in the town, but was told that his services must be limited to staying at the home to inform the parish priest in the next room when the time had come for the last rites. The young, red-headed doctor informed the family that he would care for the patient as he should be cared for—or not at all. They had been told by their "family doctor," the local druggist, that the patriarch of the family would probably die from his pneumonia. When Dr. Hoyt was accepted as

physician in charge, he opened the tightly closed windows, moved the bed closer to a window, and then got rid of most of the family who were crowded in the room. Don Pedro had been sick for a little over a week. That night he had the typical crisis of lobar pneumonia. When he had trouble getting rid of the accumulated secretions, Dr. Hoyt used a vigorous treatment to bring on the desired coughing. The patient promptly improved and recovered. The Don asked the doctor about his fee. "Doctor Colorado" replied that his fee for the service he had rendered was $500. Don Pedro counted out $500 in gold from a bag hidden in the adobe wall of his home. (There were no banks in Bernalillo.) The parish priest, whose ministrations had not been needed, questioned the amount of the payment. Don Pedro replied, "He saved my life, didn't he? If he had asked twice as much, I would gladly pay." Could this have been the beginning of usual and customary fees for Bernalillo?

The Railroad Made The Difference

Up to this point, Las Vegas had been the largest town in the Territory and Santa Fe the most important. Old Town Albuquerque had remained a small, sleepy village—but a change was coming. The Santa Fe completed laying tracks across cactus, sand, and adobe to a spot two miles east of Old Town. But a boom town was waiting there, New Albuquerque— twelve saloons, five hotels, thirteen general stores, three pawn shops, and a red-light district—all housed in wooden structures, clapboard houses, shacks and tents, instead of the adobe buildings of Old Town. On April 28, 1880, about noon, the first trainload of paying passengers rolled noisily to a stop at the new wooden depot on Railroad Avenue. In the midst of a wild celebration, there occurred the beginning of present day Albuquerque. The first directory for new Albuquerque, published three years later in 1883, listed 2 dentists, 3 drugstores, and 16 doctors. Apparently the medical profession was overcrowded as some names never appeared again. Perhaps the three drugstores, with possibly some counter-prescribing, were too much competition.

The decades of the 1880's and 1890's saw the beginning of the gathering together of physicians to accomplish several aims. They were meeting for scientific stimulation, to further public health, and to attempt to secure needed Territorial medical legislation. On December 31, 1881, eight doctors met in Las Vegas to organize a medical society. They adopted a remarkable constitution and by-laws. A month later, January 28, 1882, fourteen local doctors of Las Vegas signed the constitution and became members of the Las Vegas Medical Society, with dues of $5.00 a year. The purpose of this organization was to undertake a legislative program that was both sound and timely. They learned that year that politicians are hard to influence—as true then as now. On March 4, 1882, a Fee Bill was adopted with the following action: "In order to establish as far as possible, uniform rates for professional services, and to prevent litigation, members of the Las Vegas Medical Society pledge themselves, as far as is consistent with the circumstances of the patient, to be governed by the Fee Bill."

From then on, the Las Vegas Medical Society held regular monthly meetings with scientific sessions. Dr. W. H. Page (Harvard Medical School 1853), presented the first formal paper, an essay on "Variola," once more epidemic in the Southwest. By summer, a few disciplinary measures were instituted. Three doctors were dropped from membership after they failed to have their credentials placed on file. Three other members were censored for violating the code of ethics of the AMA which had been adopted—they had "consulted with irregular physicians." It is interesting to note that the AMA code of ethics has been an accepted procedural guide in New Mexico for 85 years, continuously.

By the following summer, the Las Vegas committee on revision of Territorial Medical Laws reported that "quacks still can not be convicted in New Mexico." Three years later, February 7, 1885, the president of the Las Vegas Society stated at a meeting: "The time is drawing near when the increase in population of New Mexico Territory demands

a Territorial Medical Society. We must emerge from a local society to a general medical society." To this end, doctors from around the Territory were invited to become members of the Las Vegas Medical Society. From the Albuquerque area, the first doctors to respond were Dr. W. B. Lyons of Albuquerque and Dr. Harrison of Bernalillo. There was not as yet a Bernalillo County Medical Society. By summer, four more Albuquerque physicians were elected to membership in the Las Vegas Society: Dr. James Wroth, Dr. Theodore Heller, Dr. S. M. Haslea, and Dr. J. Muhl.

On November 14, 1885, the Las Vegas Medical Society changed its name: "All members of the Las Vegas Society in good standing are considered members of the New Mexico Territorial Medical Society." The first recorded meeting of the new society was on January 2, 1886. To secure additional members from around the Territory, a publication was planned and the dues were dropped to $3.00 a year. The first annual meeting was July 7, 1886, in Las Vegas. A motion to hold the next annual meeting in Albuquerque or Santa Fe was turned down for fear of lack of interest. Dr. Lyons of Albuquerque became second vice-president; he was the first doctor from outside Las Vegas to be elected to office in the Territorial Medical Society. At the next annual meeting, also in Las Vegas, failure to secure the desired medical legislation was again reported. One of the scientific papers on the program concerned the treatment of sprains by the application of mud. Another doctor preferred a cast of silicate of soda and potash as being lighter. Earlier, Dr. Hoyt of Bernalillo had reported that when he was called to a remote sheep camp or cattle ranch to set a broken bone, he always called for a pan of wet adobe to make a cast.

About this time, older doctors were retiring and quite naturally some were dying. It was an era when sentiment need not be hidden—in speech or in the Society's resolutions. I quote from the Memorial at the death of the only doctor in Mora County "There was no rust on the wheels of his life; he died, as we might all wish to die, dutifully heeding his life's work to the end."

At the annual meeting of the Territorial Medical Society in 1890, the members again voted down the idea of having the annual meeting in Albuquerque. This, in spite of the fact that Dr. Wroth was a member of the Executive Committee. However, at the 1891 meeting in Las Vegas, only the local doctors there attended—and Albuquerque had won its battle. The time of the next annual meeting was changed however, from July to September when it would be "Fair Week" in Albuquerque, and the Santa Fe Railroad would be offering special rates. There would also be special attractions at the Fair Grounds out in Old Town—everything from races between the four volunteer fire companies to a baloon ascension.

At long last, September 14, 1892, the 11th annual meeting of the Territorial Medical Society finally took place in Albuquerque. Eight local doctors applied for membership, including Dr. W. G. Hope, Dr. J. S. Easterday, Dr. J. F. Pearce; Dr. Hardrich, Dr. Chas. Ellinston, Dr. Chas. Winslow, Dr. G. A. Wall, and Dr. J. P. Kaster, the Santa Fe Railroad surgeon. They were all accepted, as well as eleven other doctors from various towns. This brought the total membership for the Territorial Medical Society to approximately 50. It was a most successful meeting, especially in the scientific sessions. Dr. T. P. Martin of Taos discussed "Taos Valley as a Resort For Consumptives." Dr. Hope read a report entitled: "Is There Malaria in the Rio Grande Valley?" When new officers were elected, Dr. James Wroth became president, the first Bernalillo County doctor to be so honored. It was decided to hold the annual meeting in Albuquerque until a change seemed desirable.

Two years later, the annual meeting in Albuquerque was on September 11, 1894. Apparently the Bernalillo County Medical Society had been established during the winter of 1893-94, as the first component group of the Territorial Medical Society. I quote from the minutes: "Dr. Hope added a correction to the Secretary's report, namely that the Bernalillo County Medical Society had held a number of meetings during the year."

This is the first indication of the existence of our present County Medical Association. Dr. Hope may well have been the first president of our Society.

In 1897, there was one other reference to the Bernalillo County Medical Society in the minutes of the Territorial Medical Society. This was a resolution in glowing terms thanking the Bernalillo Society for hosting the annual meeting. There were also thanks to the mayor of Albuquerque for use of the city hall as a meeting place, and last but not least, sincere appreciation of the efforts of "the ladies," which made the meeting a success. At this time, dues for the Territorial Society were dropped to a dollar a year. New officers included president, Dr. J. F. Pearce, and Secretary, Dr. G. A. Wall, both of Albuquerque.

The Duke City had now grown from a population in 1870 of 7,000 (all in Old Town) to 14,300 in the two towns at the turn of the century. In the decade from 1900 to 1910, names of physicians began to appear that many of us recognize: E. E. Osuna, John Elder, the Bronson brothers, M. K. Wylder, P. G. Cornish, Sr., father of the late Gillette Cornish and grandfather of Dr. "P. G."; "Red" Rice's father, and Jim Wiggins' dad was at Moriarty. Presidents of the County Society during those years include Drs. Wroth, Reidy, Fitzgerald, Spargo, Wylder, Pearce, Easterday, Elder, and Cornish, Sr. The first coroner was Dr. Russ from Old Town. The first Public Schools Board was Dr. Wroth, Dr. E. N. Wilson, and Dr. Easterday. Dr. O. H. Cairns was the city physician.

Dr. John Tasher, who came to Albuquerque for his health, bought the first electric coupe in 1903. Dr. Wylder, Dr. Wroth, and Dr. Osuna exchanged their one-horsepower buggies for one-horsepower, one-cylinder Reos. Dr. Hope, however, still preferred the certainty of horsepower. A few two-cylinder cars, new Maxwells, appeared in town. In 1909, Dr. Cornish and Dr. Rice bought cars. In spite of a new car, Dr. Cornish came to be known as one of the "Four Horsemen," along with Dr. Hope, Dr. Pearce, and Dr. Easterday.

The Climate Made The Difference

Part of the rapid increase in population was due to our climate. The high, dry, desert country had become famous as a good place to "chase the cure" of tuberculosis, called "galloping consumption" by the families of those afflicted. The "cure" was climate and rest during a long drawn out period of waiting and hoping, in the dryness and sunshine of our Southwest. Albuquerque became a center for sanitaria devoted exclusively to the care of T. B. patients. The Sisters of Charity in the 1880's had converted one of the buildings of the present St. Vincent Academy for Girls into a general hospital, but Albuquerque could not support a general hospital at that time. In 1902, these same Sisters planned and built a Tuberculosis Sanitarium. The three-story building was estimated to cost $30,000 but actually cost $50,000. It stands today, practically leaning temporarily against the new St. Joseph Hospital now under construction. It had a capacity at first of about 20 or 25 beds, for T. B. cases only. In 1930, the famous "purple" hospital building was constructed. It is interesting to note that the operating room in the first surgical pavilion was furnished by the Bernalillo County Medical Society.

In 1908, the Mission Board of the Presbyterian Church bought a small building at the corner of Oak Street and East Central to serve as a T. B. sanitarium for patients who were coming from all over the country. Not until 1917, did the hospital enlarge and become a general hospital, but it then started on the program that has resulted in the continuously growing Presbyterian Medical Center.

By 1910, East Central Avenue from Broadway to Yale could have been known as "T. B. Avenue." The Methodists had a main building and cottages where Galles Motor Company is today. In 1908, Dr. Abraham Shortle, Sam Shortle's father, opened the Albuquerque Sanitarium on East Gold. Later, these buildings, and the cottages on the slope down to East Central, were purchased by the Lutherans and then in turn by the national Greek Fraternal group, Ahepa, for use by their T. B. patients. Drs. Murphy and

Mulky had a private sanitarium, including numerous cottages, on East Coal. This place was later St. John's Hospital. The buildings remain today as the Alta Vista Apartments in the 800 block of East Coal. Most patients in all sanitaria in Albuquerque were placed in small, separate, one-room cottages with the upper half made of screens covered with canvas.

There were sanitaria scattered throughout the State and at the peak, there were probably 15,000 cases of tuberculosis out of a State population of 400,000. The greatest concentration of beds for the care of these victims of the "white plague" were in Albuquerque—probably about 300. It is estimated that there were some 3,000 cases of T. B. in the city, not all of them needing to be in sanitaria.

Besides the institutions mentioned, there were other hospitals in the city for care of surgical and internal medical cases. The Womens' and Childrens' Hospital on East Central was founded by Drs. Rice, McLandress, Van Atta, Royer, Brehmer, and others. It was a general hospital which also provided care for T. B. patients in a small separate building. The Santa Fe Hospital for railroad employees was located first on South Broadway on the east side of the street in the 800 block just north of St. Xavier Church. The building remains today as the Convent and School of the parish church. This first A. T. & S. F. Hospital was replaced by the present building on East Central. Dr. J. P. Kaster, Santa Fe surgeon, was very active in the early years of the Bernalillo County Medical Society. Dr. Cornish, Sr., Dr. W. R. Lovelace, I, and Dr. H. W. Goelitz were other prominent Santa Fe Hospital doctors.

The list of physicians in the 1907-08 Albuquerque Directory numbered 41. Their offices were in the N. A. Armijo building, still standing on the corner of 2nd and Central, the Whiting building on the corner of Gold and South 2nd, and the Barnett and Occidental buildings. A number of doctors had offices in hotels and others, in their homes. Specialists included surgeons, chest physicians, E. E. N. & T., diseases of women; the rest were presumably general practitioners. Names of this period should be quite familiar to those of you who came to Albuquerque before World War II: Drs. Mulky, Peters, Meachem, Van Atta, McLandress, Royer, Hannett, Woolston, Thearle, Clayton, and Bill Cohenour's father. Dr. Evelyn Frisbie has the distinction of having been the only woman physician who was president of both County and State Medical Societies.

Dr. Lovelace I, uncle of the late Randy Lovelace, Dr. Lassetter, father of Ed Lassetter, and Dr. Dan Lamon founded the Lovelace Clinic in 1922. Other doctors joined the Clinic in subsequent years; among the first were Dr. Elliot, Dr. Miles, and Dr. Johns, Bill Johns' father. Fine physicians of this era, still living in Albuquerque, but not practicing, are Drs. Mendelson and Stewart. Still going to their offices and actively practicing are Drs. J. E. J. Harris, H. L. Brehmer, Emmett Royer, W. R. Lovelace, I, and Ben Roberts, father of Jack Roberts. The author is officially retired, but goes to an office every day and has a son, Scott Adler, and a sister, Dr. Eleanor Adler, in practice.

Membership in our Bernalillo County Medical Society ranged from a high of 56 in 1920 to an average of 46 during the war years. It is now 365. The State Society currently has 761 members out of 800 M.D.'s in the State. The tremendous jump in the population of Albuquerque in the '50's and '60's resulted in an equally substantial increase in the physician population.

This was to be a history of the medical past in the areas of Old Town and New Town, Albuquerque. Truly there has been romance in the unique and fascinating story of early care of the sick in our part of the valley of the Rio Bravo. It is with pride that we note the progress made over four centuries in the quality and extent of medical services. We have welcomed the increased number of trained men and women physicians who have settled here. We can be proud of the medical traditions of the past and equally proud of the contributions to medical care of the sick by the current members of the Bernalillo County Medical Association. We practice our profession in a wonderful part of the world. in an almost ideal climate, with cultural advantages and outdoor recreation available. Truly, as doctors, we are fortunate. •

Psychiatric drugs, 1967

Walter W. Winslow, MD, and Walter N. Stone, MD, Albuquerque, N. M.

A summary of the present status of drugs used in the treatment of psychoses, anxiety, and depression.

IN 1954 THE TREATMENT of psychiatric disorders was greatly altered with the introduction of the drug chlorpromazine (Thorazine). This discovery triggered an intensive search for more effective psychiatric drugs and resulted in the production and marketing of many new compounds. These new drugs became known generally as *tranquilizers.*

Tranquilizers may be divided into major and minor groupings. The major tranquilizers, in general, have antipsychotic properties and the minor tranquilizers, antianxiety properties.[9,11,16] Although not tranquilizers in the strict sense a group of drugs known as antidepressants have also become an important part of modern psychiatric drug treatment.

Major Tranquilizers

The major tranquilizers are used primarily in the treatment of psychotic disorders and more properly should be referred to as *anti-psychotic drugs* rather than *major tranquilizers.* The phenothiazine compounds are the most commonly prescribed drugs in the major tranquilizer grouping with chlorpromazine (Thorazine) representing the first as well as the most popularly prescribed phenothiazine. The phenothiazines can be sub-divided into three major groups—the aliphatics (e.g. chlorpromazine), the piperidines (e.g. thioridazine) and the piperazines (e.g. trifluoperazine). For a more detailed classification of the commonly prescribed major tranquilizers refer to Table 1.

More recently the thioxanthenes and the butyrophenones, both non-phenothiazines, have been reported to have antipsychotic properties and should be included in the major tranquilizer group of the psychiatric drugs. Chlorprothixene (Taractan) is an example of a thioxanthene and Haloperidol (Haldol) an example of a butyrophenone derivative.[8] Whether these drugs will be as effective as the phenothiazines in the treatment of the psychoses will be determined only after further clinical trials are conducted.

The rauwolfia derivatives are only rarely used as major tranquilizers at this time.

The phenothiazines, after 14 years of clinical use and well controlled experimental studies, have been well established as effective drugs in the treatment of the psychoses. Chlorpromazine (Thorazine) is one of the most frequently prescribed drugs in this country despite the fact that it was the first phenothiazine introduced and many other phenothiazines have been marketed in the interim.

The phenothiazine compounds are not only

TABLE 1
MAJOR TRANQUILIZERS

	Generic Name	*Trade Name*
A. Rauwolfia Derivatives	Reserpine	Serpasil
B. Phenothiazines		
1. Aliphatics	Chlorpromazine	Thorazine (SKF)
	Promazine	Sparine (Wyeth)
	Triflupromazine	Vesprin (Squibb)
2. Piperidines	Thioridazine	Mellaril (Sandoz)
3. Piperazines	Acetophenazine	Tindal (Schering)
	Carphenazine	Proketazine (Wyeth)
	Prochlorperazine	Compazine (SKF)
	Perphenazine	Trilafon (Schering)
	Trifluoperazine	Stelazine (SKF)
	Fluphenazine	Prolixin (Squibb) Permitil (White)
C. Thioxanthenes	Chlorprothixene	Taractan (Roche)
	Thiothixine	(experimental)
	Clopenthixol	(experimental)
D. Butyrophenones	Haloperidol	Haldol (McNeil)
	Triperidol	(experimental)
	Trifluperidol	(experimental)

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effective in the acute phases of psychoses but evidence continues to mount which demonstrates that adequate drug maintenance following discharge from hospital actually decreases the re-admission rate of schizophrenic patients. There is evidence to believe that the phenothiazines, prescribed in adequate maintenance doses and taken by the patient as recommended by the physician, actually prevents hospitalization, not just postpones it.

However, the failure on the part of the patient to continue taking the drugs as prescribed once he becomes an outpatient is a major problem. Some studies have shown that approximately one-half of psychiatric outpatients fail to take their drugs as prescribed.[21] Certainly post-hospital drug regimens should be as simple as possible. Complicated drug regimens are doomed to failure. This suggests the need to develop community-based resources for the effective long-term follow-up and drug supervision of discharged schizophrenic patients.[5]

One effective drug maintenance program has been recommended by Ban.[1] He recommends the giving of a daily maintenance dose of one-half, or less, of the amount of drug required to control the acute phase, continuing the phenothiazine for one year following the first illness, two years following the second, and indefinitely following the third psychotic episode.

A long-acting phenothiazine, fluphenazine enanthate (Prolixin) has recently been introduced which provides adequate blood levels when given bi-weekly by intramuscular injection. This may be a partial answer, at least in some patients, but further clinical trials are needed to establish the effectiveness of this method in an outpatient program.

Most of the phenothiazines are effective when given once or twice daily, particularly for maintenance, but tradition seems to favor t.i.d. or q.i.d. administration. Phenothiazines should not be discontinued prematurely. Exacerbations of psychiatric symptoms frequently will occur between the fourth and twelfth week following discontinuance of medication; another indication for the need of long-term drug follow-up.

Many studies have been done comparing one phenothiazine with another but there remains little experimental evidence that one drug is specifically more effective than another. All are more effective than a placebo. Most phenothiazines, given in adequate doses are effective in the treatment of the psychoses and every clinician prescribing these drugs should familiarize himself with one or two phenothiazines and stay with these until further clinical evidence demonstrates that another drug is superior. Skill and experience with one or two phenothiazines are far more important than a trial and error method of attempting to find a specific phenothiazine for a specific patient. Phenothiazines prescribed for neuroses are of limited value. Side effects usually encourage the patient to discontinue the medication.

What about combinations of phenothiazines? There is little evidence that two or more phenothiazines prescribed in combination are more effective than one used separately. In some instances, particularly in agitated depression, a phenothiazine and an antidepressant prescribed in combination is effective.

Serious adverse side effects are not common, particularly when it is realized how extensively these drugs are prescribed. Oversedation may occur early but usually subsides in three or four days. Extrapyramidal symptoms are probably the most common side effects but can readily be controlled by decreasing the drug or prescribing one of the anti-Parkinson drugs. Autonomic nervous system symptoms such as hypotension, tachycardia, blurred vision, nasal congestion or inhibition of ejaculation may occur. Toxic or allergic reactions including cholestatic jaundice, agranulocytosis, thrombocytopenic purpura, contact dermatosis and photosensitivity occur infrequently.

More recently an unusual melanin pigmentation of the skin, cornea and lens has been reported and has been called *"the skin eye syndrome."* This syndrome results from long-term, high dosage administration particularly of chlorpromazine, but may occur with a number of other phenothiazines.[6] Sudden deaths occurring in patients on high

dosages of phenothiazines have been reported, and even though some of these deaths were attributed to asphyxia from regurgitation and inhalation of gastro-intestinal contents, other deaths were attributed to intramyocardial lesions.[17] A physician who prescribes these drugs should be alert to all of the known side effects so they will be recognized early and appropriate treatment instituted.

Minor Tranquilizers

Anxiety is not a specific reaction for any particular emotional disorder. There are a number of drugs available for alleviation or diminution of anxiety, but because of the many facets of anxiety, other factors besides specific drug action are important in evaluating overall treatment effect.

Meprobamate (Equanil, Miltown), which was introduced into general use in 1955, has received wide study. The benzodiazepine compounds (Librium, Valium, Serax) have been available more recently. See Table 2.

The initial enthusiasm that these drugs would be the panacea for treatment of anxiety was followed by a period of skepticism that they were no more effective than a placebo. More recent studies have indicated that these drugs will reduce anxiety when compared with a placebo.[23]

Drowsiness is the most commonly reported side effect which usually appears early in treatment and disappears as treatment continues. Tremor, ataxia, and abdominal discomfort are reported less frequently; severe ataxia may occur more frequently in older patients. The benzodiazepine compounds may also produce orthostatic hypotension and retarded ejaculation. The uncommon but serious problem of habituation and addiction of patients to minor tranquilizers is well known. Convulsions on withdrawal are a disturbing consequence of habituation.

In summary, the minor tranquilizers are useful in control of anxiety in some patients. Because of the non-specific nature of anxiety, and because of the multitude of symptoms which fall under the rubric of anxiety, the specific response in any individual patient is not predictable. The choice of drug also would depend mainly on the relatively minor, but disturbing side effects. The alternatives of continuing the drug at the same level for a short period of time to allow the patient to adjust to the drug, reducing the dosage, or changing to a different minor tranquilizer usually suffice in controlling these side effects.

TABLE 2
MINOR TRANQUILIZERS

	Generic Name	*Trade Name*
A. Propanediol Derivatives	Meprobamate	Miltown (Wallace) Equanil (Wyeth)
	Tybamate	Solacen (Wallace)
B. Benzodiazepine Compounds	Chlordiazepoxide	Librium (Roche)
	Diazepam	Valium (Roche)
	Oxazepam	Serax (Wyeth)
C. Miscellaneous	Hydroxyzine	Vistaril (Pfizer) Atarax (Roerig)

Antidepressants

Medications used in the treatment of depressions are readily available and are used widely in all areas of the practice of medicine. However, careful and critical use of these drugs requires, as with any potent medication, familiarity with the indications for their use, spectrum of action, and side effects.

The diagnosis of the typical clinical depression is not a difficult problem but the wide variation in behavioral and psychophysiological responses which patients present as either their primary complaints or as concomitants of their depression, leads to difficulties in diagnosis as well as in development of a classification of depressive illness. Lehmann has differentiated the uses of the word depression; noting it is used as a descriptive term, a symptom, or a psychiatric disease with a spectrum of related symptoms.[15] This varied use of the term depression has made it difficult to determine the nature of the treatment in many of the clinical studies. In addition, the well-known remitting character of depressive illness either spontaneously or with brief supportive-relationship therapy has further obscured the precise nature of drug effects. At the present state of knowledge of drug action, the various classification of depressive illness offer no clear-cut criteria or symptom constellations which would permit accurate prediction of which patient will respond to which drug.

Historically there have been three major

developments in the drug treatment of depressions: (1) amphetamines, (2) monoamine oxidase inhibitors, (3) tricyclic compounds. See Table 3.

TABLE 3
ANTIDEPRESSANTS

	Generic Name	*Trade Name*
A. Amphetamines	Dextroamphetamine	Dexidrine (SKF)
	Methamphetamine	Methedrine (BW&Co)
B. Monoamine Oxidase Inhibitors		
1. Hydrazine Compounds	Nialamide	Niamid (Pfizer)
	Isocarboxazid	Marplan (Roche)
	Phenelzine	Nardil (Warner-Chilcott)
2. Nonhydrazine Compounds	Tranylcypromine	Parnate (SKF)
C. Tricyclic Compounds	Imipramine	Tofranil (Geigy)
	Desipramine	Pertofrane (Geigy)
		Norpramin (Lakeside)
	Amitriptyline	Elavil (MSD)
	Nortriptyline	Aventyl (Lilly)

The first drug treatment was with amphetamines, synthetic derivatives of epinepherine. These compounds increased energy and were useful in patients with mild depressions. Patients who received these drugs would have a temporary increase in energy, would feel more capable of working, but would be subject to a let down after the duration of action of the amphetamines. In addition, the rapid development of tolerance and the tendency toward habituation has diminished the therapeutic usefulness of these drugs.

The observation that some patients who received iproniazid as part of the treatment for tuberculosis became hyperactive, led to studies of compounds which may act clinically through the inhibition of monoamine oxidase.[20] Iproniazid (Marsilid) was soon found to have a high incidence of severe liver toxicity and was removed from the market in the United States, although it is still available in Great Britain.

The MAO inhibitors presently available can be classified chemically as hydrazine and nonhydrazine compounds. The three hydrazine drugs available are phenelzine (Nardil), nialamide (Niamid), and isocarboxazid (Marplan). The reported therapeutic efficacy of these drugs is variable, but they seem to be only somewhat more effective than a placebo. The nonhydrazine MAO inhibitor, tranylcypromine (Parnate), apparently is more effective than those in the hydrazine group.[4] The overall improvement rate for MAO inhibitors compared to that achieved with the tricyclic compounds is not as great, yet in certain instances the MAO inhibitors may be more helpful. These may include depressions with atypical features, including obsessional ideation, phobic anxiety, or possibly pseudoneurotic schizophrenia.[18]

Common side effects include dry mouth, blurred vision, orthostatic hypotension, ankle edema, sleep disturbances and, rarely, hypomanic behavior. Most of these symptoms can be controlled with reduction in the amount of medication. The incidence of the serious cardiovascular toxic effects with the MAO inhibitors, especially tranylcypromine (probably because it is used more frequently) has not been great, but the serious nature of hypertensive crises and cerebrovascular hemorrhage has impressed the need for caution when using these drugs. Several drugs including the amphetamines, and foods containing high quantities of tryramine, such as various cheeses, chicken liver, beer, and Chianti wines have been implicated as precipitants for the cardiovascular crises.

In 1958, R. Kuhn, during a trial of tricyclic compound, imipramine, in schizophrenic patients, noted that although there was no antipsychotic action, some patients experienced a mood elevation.[13] This careful observation led to uncovering another group of compounds which were later proved to be effective in treatment of depression. Investigations into the possible mode of action of these drugs has stimulated great interest in the role of catecholamine metabolism in depression. The hypothesis that MAO inhibitors blocked monoamine oxidase action on norepinepherine and thereby made norepinepherine more available in the central nervous system resulting in improvement of depression, was further strengthened by studies indicating that imipramine may block norepinephrine transport across the neuronal cell membrane and functionally increase

norepinephrine available at the nerve endplates. This gross over-simplification of some still early and exciting hypotheses and linkages between norepinephrine metabolism and depression has led to a great increase in research in depression.[19,2]

A number of tricyclic compounds are available. Imipramine (Tofranil), the most widely studied, and the desmethyl derivatives desipramine (Norpramin, Pertofrane) are one subgroup; amitriptyline (Elavil) and its derivative nortriptyline (Aventyl) represent another. As far as known, these antidepressants have very similar modes of action and although there may be some patients who respond to one and not to another, they generally are effective in both neurotic and "endogenous" depressions.[12,22] The onset of action is highly variable and is usually delayed seven to fourteen days. The introduction of the derivatives of imipramine and amitriptyline was thought to offer the advantage of more rapid onset of action, but to date there has been no clear-cut evidence that this occurs. There remains a number of patients who will not respond to these drugs who may respond to convulsive treatment. In addition because of the delay in onset of action, patients in whom there is a high risk of suicide should receive convulsive therapy.

The side effects of these compounds relate frequently to their atropine-like action. In evaluating a patient's symptoms, commonly noted "side effects" are present in most of the patients before the commencement of treatment and these symptoms are erroneously reported as due to drugs.[3] The common autonomic side effects include dry mouth, increased sweating, difficulties with visual accommodation and constipation. Urinary retention may be a problem in older patients. Postural hypotension and tachycardia occur in about five per cent of all cases, and elderly patients with pre-existing cardiovascular disease should receive these drugs with caution. Other reported effects include convulsions, various skin rashes, jaundice (0.5% to 1%of cases) and rare agranulocytosis.

The combination of tricyclic compounds with MAO inhibitors has been hazardous. Cases have been reported in which severe dizziness, restlessness, hyperpyrexia, vascular collapse, and hallucinations have resulted. Reports from England have shown that drugs in these two groups can be combined in the successful treatment of patients who do not respond to other antidepressant therapies,[7] but there have been no recent reports of the use of such combinations in the United States literature.

Comparative studies of tricyclic compounds with MAO inhibitors are not uniform in finding one type of drug superior to the other. The distinct impression remains that the tricyclic compounds are more effective in severe depressive reactions, and because of lesser concern over significant toxic effects, the tricyclic compounds are the initial drugs of choice in the treatment of depression.

The question of the duration of antidepressant drug therapy has received considerable attention and cannot be answered definitely at this time. Continued treatment for six months apparently prevents relapse more effectively than electroshock.[14] Follow-up studies continuing for eighteen months, report no differences in relapse rate between patients continued on medication and controls.[10]

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Summary

Many new psychiatric drugs have been introduced since 1954 and this increase in the number of available drugs has sometimes led to confusion rather than to more effective treatment of psychiatric illnesses. In the opinion of the authors a clinician should become experienced in the use of one or two drugs in each major grouping rather than to attempt to prescribe, in a trial and error manner, all of the available psychiatric drugs.

The major tranquilizers are antipsychotic drugs and generally are useful in the psychotic disorders only. The minor tranquilizers are anti-anxiety drugs and generally are effective only in the non-psychotic anxiety disorders. Of the antidepressant drugs, the monoamine oxidase inhibitor group and the tricyclic group are both effective in the treatment of depressive reactions but the tricyclic compounds seem to be the favorites at the present time.

Side effects are uncommon with all of the tranquilizers but a physician using these drugs should become familiar with all of the known side effects so he can make an early evaluation and take the necessary treatment steps when an adverse reaction does occur. •

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Water and electrolyte disturbances associated with diabetic ketoacidosis*

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A review of the management of fluid deficits and electrolyte disturbances in diabetic ketoacidosis.

"The treatment must be individualized and must be energetically and intelligently conducted. One cannot afford to sleep or even wander far from the bedside until the patient has recovered." Peters[1] thus placed in clear perspective the clinical urgency associated with the management of diabetic ketoacidosis—truly a medical emergency.[2] This discussion begins with the basic assumption that insulin constitutes the keystone in the treatment of diabetic ketoacidosis. We wish to emphasize, however, that of nearly equal importance to insulin in the treatment of this metabolic disorder is the proper management of the coexisting fluid, electrolyte, and acid-base distortions. Accordingly, this discussion will encompass a consideration of water deficits, alterations in serum Na, K, Cl CO_2, Mg, BUN, and glucose as is found in diabetic ketoacidosis. This review is undertaken in the hope that it will be of assistance to clinicians in their management of this complex, multifactorial metabolic disorder.

1. *Water Deficits:* Estimates of water deficits in diabetic ketoacidosis approximate 100 cc/Kg. of body weight.[3] This deficit is shared by both the extracellular and intracellular compartments.[4] Genesis of this dehydration can be ascribed to: (1) hyperventilation accompanying diabetic ketoacidosis, (2) inappropriate losses of water despite progressive dehydration as a consequence of the osmotic drive of glycosuria,[5] and (3) gastrointestinal losses incurred from emesis. Losses incurred during ketoacidosis, other than that derived from vomitus, which is isotonic, are significantly hypotonic with respect to Na—urine contains sodium at a level considerably lower than that found in serum, insensible losses including the Kussmaul respiration of ketoacidosis result in water deficits alone, and sweat is hypotonic.[6] Several points of clinical importance may be derived: (1) Solutions hypotonic in respect to their Na content are preferable in the treatment of diabetic ketoacidosis in view of the fact that losses of water exceed that for Na. Persistence in administering isotonic Na solutions may result in hypernatremia. (2) Deficits of water are significant in ketoacidosis (e.g. in a 70 Kg patient, at a water deficit of 100 cc/Kg the total deficit equals 7 liters).

2. *Serum Sodium:* The importance of Na and its accompanying anions, principally Cl has been stressed in relation to its primacy in determining extracellular tonicity as well as volume.[7] An estimate of extracellular (and indirectly intracellular) tonicity may be obtained by multiplying the concentration of serum Na by 2 (e.g. normally, Na=140 mEq/L x 2=280 + 10=290 m Osm/Kg.). Significant Na deficits are associated with contraction of extracellular fluid volume and if sufficiently severe, hyponatremia.[8] Although in the presence of diabetic ketoacidosis, Na deficits have been estimated at 8

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mEq/Kg of body weight,[3] hyponatremia may not reflect hypotonicity but in fact may be detected in the presence of hypertonicity. In diabetic ketoacidosis, the serum Na concentration may be proportionately decreased as a consequence of the mobilization of cell water into the extracellular compartment in response to the hyperosomoticity exerted by the elevated glucose concentration.[6] For every 180 mgm% excess in serum glucose concentration, serum osmolality is increased approximately 10 m Osm/Kg. In addition to significant hyperglycemia, another source of spurious hyponatremia in diabetic ketoacidosis is the hyperlipemia which can accompany uncontrolled diabetes mellitus.[9] Displacement of serum water by the elevated lipid fraction accounts for spuriously lowered serum Na concentrations.[7] In one series, 67 per cent of patients with ketoacidosis entered with decreased serum Na levels, 26 per cent were normal and 7 per cent were elevated.[10] The following points are emphasized (1) Significant deficits of Na exist in diabetic ketoacidosis, (2) "pseudo-hyponatremia" may be detected as a consequence of significant hyperglycemia and/or hyperlipidemia, (3) significant hypertonicity and "pseudohyponatremia" may coexist in diabetic ketoacidosis as a consequence of hyperglycemia.

3. *Serum Potassium:* On admission, serum K concentration is usually normal or elevated.[10] In contrast to the predominant extracellular cation, Na, K is the major intracellular cation. It is currently held that the asymmetrical distribution of K within cells and Na without, is maintained by a metabolically driven cationic pump present within the cell membrane.[11] Recently, two deaths in diabetic ketoacidosis were recorded[12] in which cerebral edema was uniformly observed on postmortem examination. It was postulated that inappropriate amounts of Na accumulated within cerebral cells, resulting in back diffusion of water, cerebral edema and death. These cases may exemplify one of the consequences of a malfunctioning cationic "pump."

The genesis of the hyperkalemia associated with diabetic ketoacidosis is based on several factors (1) translocation of cellular K in response to metabolic acidosis[13], (2) depression of renal function as a consequence of dehydration with a decrease in the K for Na exchange at a distal site of the nephron.[14] Despite the initial presence of hyperkalemia, it should be clearly emphasized that K deficits in diabetic ketoacidosis are significant and have been estimated at 6 mEq/Kg of body weight.[3] The extent and severity of K depletion which may be present is illustrated by the onset of cardiac conduction defects and respiratory paralysis in a patient in diabetic ketoacidosis as a consequence of depletion of this cation.[15] Experimental data indicate that tissue K levels are significantly decreased in alloxanized rats in ketoacidosis.[16] Thus, the K deficiency associated with diabetic ketoacidosis can be ascribed to: (1) continuing losses by way of the kidneys, (2) decreased intake, (3) extrarenal losses of K (e.g. emesis) and translocation of cell K as a consequence of the metabolic acidosis. It is apparent that once urine flow has been clearly established, rehydration instituted, and hyperkalemia dissipated in response to therapy, provision of K is indicated, for with amelioration of the acidosis[17] as well as the action of insulin and glucose[18] in restoring K to cells, a decrease in serum K concentration may be anticipated.

4. *Serum Chloride:* Chloride levels are usually normal or elevated in diabetic ketoacidosis but can also be decreased.[10] Deficits of Cl have been described approximating 5 mEq/Kg.[3] Sprague et al. have noted that during development of acidosis Cl as well as Na is lost in large quantities in the urine and in certain cases by way of the gastrointestinal tract as a consequence of severe emesis.[19] These authors allude to the possibility that should hyperchloremia be allowed to develop during therapy, correction of the acidosis may be delayed. Replenishment of Cl is important in the light of recent observations relating to correction of acid-base disturbances associated with K depletion.[20] In general, provision of hypotonic saline solutions in therapy of diabetic ketoacidosis has provided sufficient Cl.

5. *Total CO_2 content:* The serum total

CO_2 content is uniformly decreased in diabetic ketoacidosis.[10] In ketoacidosis, B oxybutyric acid production is overwhelming and may approximate 1000-2000mM per 24 hours.[21] This influx of H^+ ions in ketoacidosis stands in marked contrast to the 50-100 mM derived under normal conditions.[22] Coupled with the overproduction of H ions is the fact that glomerular filtration rate and renal plasma flow are both decreased in the presence of dehydration thus impairing the ability of the kidneys to dissipate the acid load.[23] The mechanisms alluded to above outline the genesis of the significant metabolic acidosis associated with uncontrolled diabetes mellitus. There is little question that significant and life-threatening decreases in pH can occur in the presence of diabetic ketoacidosis. Addis et al. noted pH readings of 6.92, 6.94, 7.03, and 6.85 in 3 patients.[24] These authors advocate aggressive alkalinization in the treatment of ketoacidosis-200 mEq $NaHCO_3$ immediately and 100 mEq repeated if necessary to rapidly ameliorate the metabolic acidosis. In addition to severe, potentially life-threatening changes in pH, another reason for considering rather rapid partial correction of the metabolic acidosis with bicarbonate administration, is the experimental and clinical evidence that metabolic acidosis impairs the action of insulin. Guest et al. studying intact and eviscerated dogs demonstrated an impairment in the action of insulin in the presence of metabolic acidosis.[15] Cohen et al. noted that during the initial 12 hours of treatment, in the presence of moderate acidosis ($CO_2 > 10$) an average of 376 units of insulin were utilized. In contrast, with severe acidosis ($CO_2 < 10$), 606 units were employed.[26] Phear observed that in severely ketotic patients, response to insulin correlated with blood pH and bicarbonate levels with clear evidence that acidosis impaired the action of insulin on glucose utilization.[27] Employment of bicarbonate is preferred because of its directness and rapidity of action, not being dependent on metabolic pathways, as is lactate, for its alkalinizing effect.[28] Other reasons for preferring bicarbonate to lactate as the alkalinizing agent include the relatively rare occurrence of lactic acidosis in patients with diabetes receiving phenformin hydrochloride[29] as well as the de novo occurrence of lactic acidosis.[30] In our opinion, the most imperative situation requiring aggressive alkali therapy in diabetic ketoacidosis is the onset of circulatory collapse. Schechter et al. emphasized the importance of restoration of circulating volume in the presence of ketoacidosis and shock.[31] Howarth et al. ascribed the decreased blood pressure in ketoacidosis to a greatly decreased total peripheral resistance in view of the fact that cardiac output was not found to be decreased.[32] We emphasize the urgency of bicarbonate administration in the management of patients with ketoacidosis whose course is complicated by shock for the following reasons: (1) The metabolic acidosis present in diabetic acidosis per se can be profound and life-threatening,[24] (2) circulatory collapse is accompanied by the rapid onset of metabolic acidosis.[33,34] Because of the possibility that the cumulative effect of both diabetic acidosis and the acidosis accompanying circulatory collapse may result in lethal, overwhelming acidosis it is our view that shock complicating the course of diabetic ketoacidosis represents the clearest indication for the employment of bicarbonate.

6. *Blood Urea Nitrogen:* Seventy per cent in one series of patients in ketoacidosis entered with elevated BUN levels.[10] Azotemia in ketoacidosis reflects several different factors: (1) the severe catabolic state present in ketoacidosis, (2) dehydration and the consequent decrease in renal perfusion, and (3) rarely, acute renal injury and insufficiency. Trever et al. described 3 out of 476 patients in ketoacidosis who manifested progressive azotemia and suggested that their cases may have represented renal failure secondary to ischemia.[35] A case of overt acute tubular necrosis associated with diabetic ketoacidosis has been described.[36] In the vast majority of cases, however, unless these has been preexisting renal impairment, the azotemia is dissipated as the patient responds to therapy.

7. *Hyperglycemia:* The role played by the significantly elevated blood glucose levels (10 m Osm/Kg for every 180 mgm% in excess

of normal) in association with diabetic ketoacidosis cannot be precisely assessed. However, clinical evidence suggests that the effects of hyperglycemia per se, as exemplified by the cases of hyperosmolar, nonketotic coma[37,38] can be seriously life-threatening, as witnessed by the fact that mortality in this syndrome approximates 40%.[39] Central nervous system function can be seriously disturbed by the presence of significant hyperglycemia as evidenced by the fact that these patients exhibit twitching, somnolence, convulsions, and coma.[40] The deleterious effect of hyperglycemia may in part be ascribable to cellular dehydration resulting from the movement of intracellular water in response to the extracellular hyperosmoticity exerted by the significantly increased blood glucose levels.[6,41] Thus, to avoid the potential hazard of extremely elevated blood glucose levels, it is preferable to delay administration of glucose-containing solution in the treatment of ketoacidosis until significant amelioration of the hyperglycemia has been achieved.

8. *Serum Magnesium:* It can be anticipated that on admission a large proportion of patients in ketoacidosis will display increased serum Mg levels.[10] The hypermagnesemia may be present despite deficiency of this cation.[3] Martin et al. have reported that a decrease in serum Mg occurred 18-24 hours after initiation of therapy.[42] The factors responsible for this decrease in serum Mg concentration include: (1) urinary losses of Mg; (2) dilution, and (3) a shift of extracellular Mg into cells. Like K, cellular displacement of Mg may in part be the response to the action of insulin and glucose.[43] The necessity for repleting Mg deficiency during treatment of diabetic ketoacidosis has not been as clearly demonstrated as has been the case of K. However, experimental data suggest that in the presence of K and Mg deficiency, repletion of K is impaired in the presence of continuing Mg depletion.[44,45]

Summary and Conclusions

The keystone in the therapy of diabetic ketoacidosis remains the administration of insulin, but of nearly equal importance is the management of the accompanying disturbances in fluid and electrolyte metabolism. Some aspects of these disturbances have been reviewed in the hope that these considerations will be of assistance to clinicians.

It is concluded that in diabetic ketoacidosis:

1. Deficits of water are of a significant magnitude.
2. Hypotonic solutions with respect to Na are preferable in therapy.
3. K deficits are significant and K repletion should be undertaken once urine flow has been established and the initial hyperkalemia dissipated.
4. $NaHCO_3$ administration is indicated to partially ameliorate the metabolic acidosis as well as to insure maximum insulin effect. Alkali therapy is urgently required should circulatory collapse supervene.
5. Administration of glucose-containing solutions should be delayed until amelioration of the hyperglycemia has been achieved in order to circumvent the hazards of extremely elevated blood glucose levels.

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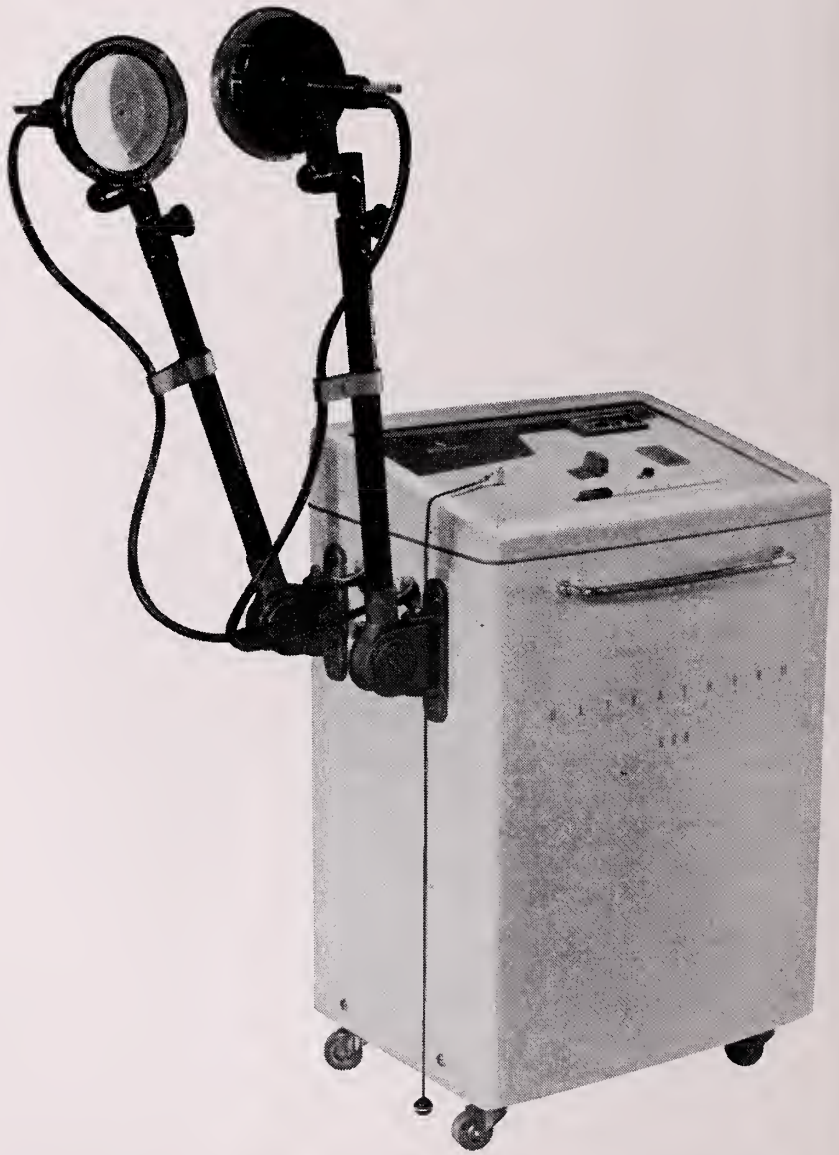

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SME-2

Coarctation of the abdominal aorta*

*An unusual condition with a new prognosis**

Archer S. Gordon, MD, PhD, James K. Conrad, MD, and James C. Kraner, MD, PhD, Albuquerque, New Mexico

A case report describes the clinical findings, diagnostic features and surgical management of this rare disorder.

COARCTATION OF THE AORTA is known to have many variations. One of the most unusual of these is coarctation of the abdominal aorta. Wood[1] has estimated that this occurs in about 2 per cent of cases. Routine use of aortography in patients with unexplained hypertension, abdominal murmurs and reduced blood pressure in the lower limbs has now made possible the diagnosis in an increasing number of cases.

Prognosis for patients with this condition was poor prior to vascular surgical correction as pioneered by Beattie, and co-workers, in 1951.[2] Many of them eventually died of congestive heart failure or cerebral hemorrhage. Bjork and Intonti[3] reviewed 26 cases in the literature and found that 14 who were not operated died at an average of 30 years. However, this lesion is now amenable to surgical repair in most cases, and the results of various vascular operative procedures to replace, by-pass or enlarge the coarcted segment have provided a new prognosis.

In 1965, Baird, et al.,[4] reviewed 20 reported cases of reconstructive surgery for coarctation of the abdominal aorta and added another successful surgical case. At about the same time, Robiscek, Sanger and Daughtery[5] reviewed 33 cases in the literature and added three new ones. More recently, DeBakey, and co-workers,[6] have reported their experiences with 26 cases of coarctation of the abdominal aorta treated during the past 13 years, sixteen associated with renal artery stenosis. The present paper details our successful surgical management of an additional case of this unusual lesion.

*From the Cardiovascular Surgery Section, Cardiology Section and Vascular Section, Lovelace Clinic, Albuquerque.

CASE REPORT

J. M., an 18-year-old white male, was first seen at the Lovelace Clinic on November 19, 1962 because of moderately elevated blood pressure, which had disqualified him for participation in high school football. During the previous summer, he had received a month's treatment for a urinary tract infection. In August, 1961, at surgery for removal of a foreign body from his foot, his blood pressure was noted to be moderately elevated. In 1959, in a motor scooter accident, he was struck in the right abdomen by the handlebar, but the injury incurred was found to be minor. He had pneumonia and spinal meningitis at age 6 months, at which time he was reported to have an enlarged heart. He had typhoid fever at age 10.

When first seen, his only symptoms were mild frontal headache and mild exertional dyspnea. Four weeks prior to this he had experienced blurred vision and disequilibrium lasting about one-half hour, while ascending a mountain in an auto. He had also noted leg cramps while chasing a rabbit during a recent hunting trip.

Physical examination revealed a fairly well-developed tall (5' 11") thin (133 pounds) adult male with recumbent blood pressure of 148/100 and pulse rate of 84. The standing blood pressure was 170/124 with pulse rate of 108. On funduscopic examination, the retinal arterioles appeared narrowed with a vein/artery of 4/2. The heart was normal except that the sound of aortic closure was under that of pulmonic and had a tambour quality. Examination of the abdomen revealed an irregularly pigmented area above and to the left of the umbilicus, representing a strawberry birthmark which had been irradiated in the past. An abdominal bruit was best heard over the umbilicus and was less distinct over the back. The femoral artery pulsations were weak, and there was a perceptible lag as compared with the brachial pulsations.

CBC, sedimentation rate, urinalysis, blood electrolytes and blood urea nitrogen were normal. Chest x-ray showed minimal costal erosion of the posterior inferior portions of the right 8th and 9th ribs and the left 8th, 9th and 10th ribs. Intravenous pyelogram demonstrated that the left kidney was larger than the right, but there was prompt excretion of the contrast material from both kidneys. Some caliectasis of the left kidney was noted in conjunction with narrowing of the infundibulum and pelvis. Minor anomalies of development of the lumbo-sacral spine were seen on the x-rays. ECG showed non-specific ST segment change anteriorly and probable left ventricular hypertrophy.

The cold pressor test raised the blood pressure from 150/100 to 185/120. An I_{131} renogram showed delayed excretion on the left. Transbrachial and retrograde femoral aortograms demonstrated coarctation of the aorta at the level of the renal arteries with probable stenosis and post-stenotic dilatation of the left renal artery (Fig. 1). The pressure gradient measured across the coarctation was between 30 mm. and 60 mm. Hg. Assays of the venous blood for constrictor material, done by Dr. Oscar Helmer in Indianapolis, Indiana, showed over twice as much constrictor material in the blood from the left renal vein and inferior vena cava as in the right renal vein, but the levels of each were low and the significance was questionable.

Fig. 1. Retrograde aortogram showing obstruction of the abdominal aorta by coarctation at the level of the renal arteries.

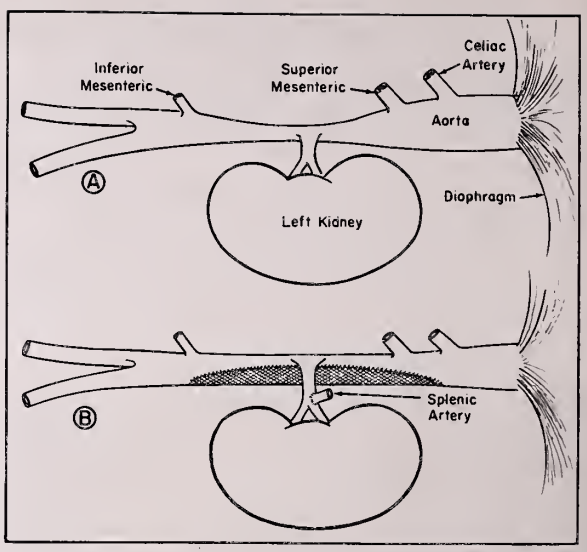

Fig. 2. (A) Preoperative. The abdominal aorta is significantly narrowed in the region of the renal vessels. The constriction begins just below the celiac artery and extends almost to the inferior mesenteric artery.

(B) Postoperative. The size of the aorta has been increased by incising the vessel posteriorly and inserting a woven dacron patch. An end-to-side anastomosis has been performed between the spelenic artery and the left renal artery.

Surgery was performed on February 19, 1963 under moderate hypothermia (28° C.). The aorta was approached via a left thoracoabdominal incision and the abdominal coarctation was found to originate just below the celiac artery and extend for approximately three inches through the origin of the renal arteries to above the level of the inferior mesenteric artery. The aorta proximal to the coarctation was of normal caliber; distally it was about two-thirds of normal size. At its narrowest, the coarcted segment measured 0.5 cm. in diameter (Fig. 2A). The vascular structures in the area of the lesion were encased in a retroperitoneal mass of dense fibrous tissue. The pressure gradient between the proximal and distal aorta was measured as 50 mm. Hg.

The vascular structures were freed from their fibrous bed after which a splenectomy was performed and the distal end of the splenic artery was anastomosed to the side of the left renal artery. The aorta was then cross-clamped between the celiac and superior mesenteric arteries above and proximal to the inferior mesenteric artery below. The posterior surface was incised longitudinally for a distance of three inches and a patch of woven dacron was sutured into this incision (Fig. 2B). During this procedure at 28° C., blood flow was interrupted for 65 minutes to the right kidney and for 30 minutes to the left kidney. When the circulation was restored, good pulses were felt in the aorta below the area of the patch and in the left

renal artery distal to the splenorenal anastomosis. Blood pressure in the proximal aorta measured 120/80 at this time.

The patient made an uncomplicated recovery and was symptom-free at the time of discharge. His brachial artery pressure stabilized at 135/84. Pulses in the lower extremities were improved and simultaneous direct tracings in the brachial and femoral arteries revealed a marked reduction in the lag-time between the two vessels. A postoperative aortogram showed satisfactory flow through the abdominal aorta into the femoral vessels (Fig. 3).

Fig. 3. Postoperative transbrachial aortogram showing improved passage of contrast material into distal aorta and femoral arteries.

At the time of this report, the patient has not had recurrence of symptoms. He is married, has a two-year-old son, and is an applicant for military service.

Discussion

This additional case of coarctation of the abdominal aorta reinforces the reports in the literature of this unusual lesion. Diagnosis is usually indicated by an abdominal bruit in the presence of a moderately severe hypertension in a young individual with reduced and delayed pulses and blood pressure in the lower extremities. It is confirmed and localized aortography. The exact etiology, congenital versus acquired, is undetermined but the features most commonly found at surgery include the following: (1) the coarcted segment usually involves the origin of the renal arteries; (2) the involved area is usually the site of dense retroperitoneal fibrous tissue which surrounds the vascular structures; (3) when the fibrous tissue is excised, the branches of the aorta enlarge to near-normal size; and (4) ischemia of visceral organs or lower extremities is not significant.

Surgical correction is indicated and has been accomplished by (1) resection and graft replacement, (2) bypass grafts, and (3) incision with aortoplasty. Resection and graft replacement can only be used for short coarcted segments at the level of the diaphragm or below the renal arteries. Retroperitoneal end-to-side bypass grafts from the thoracic aorta to the post-renal abdominal aorta have been employed most commonly, particularly when the coarcted segment is long and begins at or above the celiac artery. Side-arm grafts or additional bypass grafts to one or both renal arteries are indicated when there is preoperative evidence of impaired renal function, gross evidence of renal artery obstruction at surgery, or a measured pressure gradient at surgery at 10 mm. Hg or more between the proximal aorta and the renal arteries. Incision with patch graft aortoplasty is usually reserved for cases with severe coarctation at the level of the renal arteries.

Morbidity and mortality from the surgical procedure are minimal, and current follow-up studies indicate maintainance of a normotensive and symptom-free postoperative course for most patients. •

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Carcinoma of the extrahepatic bile ducts

George B. Markle, IV, MD, Carlsbad, New Mexico

An additional case associated with chronic ulcerative colitis

Recently it is becoming apparent that there is a more than coincidental relationship between carcinoma of the bile ducts and chronic ulcerative colitis. Van Heerden, Judd, and Dockerty,[10] discussing 78 cases of carcinoma of the extrahepatic bile ducts, cited 2 of these in which chronic ulcerative colitis had been present for many years before the diagnosis of those malignancies. Ham and Mackenzie[3] reported 2 such cases among their series of 32 patients with carcinoma of the extrahepatic bile ducts. Both of these were less than 30 years old, a fact of probable significance inasmuch as carcinoma of the bile ducts does not often occur in younger people, whereas ulcerative colitis does.

Taking the opposite approach, Rankin,[8] studied 300 consecutive cases of chronic ulcerative colitis and found 3 who developed biliary duct carcinoma. Included in this 1 per cent were the two cases of Ham and Mackenzie, to which he added one case of an intrahepatic bile duct carcinoma. The question of a causal relationship between these two diseases has been raised by these authors.

Since neither carcinoma of the bile ducts or chronic ulcerative colitis are very common, the probability of a purely coincidental occurrence is obviously remote. However, up until recently, there seems to have been little recognition of this association, and, no doubt, many more cases will be discovered as investigators recheck their cases of biliary duct carcinoma with the purpose of looking for associated diseases, and in particular, for association with chronic ulcerative colitis.

Dockerty[2] feels that we are dealing with an association of diseases that has been with us for a very long time, but which only recently has been discovered. Because of the paucity of cases recorded, and because of the fact that any new cases reported would be significant, he urged me to report this one case.

I was further encouraged to report it because of the relatively long survival (four years) of this patient following a radical operation. In general there has been great pessimism regarding carcinoma of the bile ducts, both as to cure and as to significant prolongation of useful life. About 71 per cent are found to have distant metastasis at the time of exploration, and most patients are jaundiced and in poor condition for surgery from other related causes. In the majority of cases nothing definitive can be done, and the life expectancy in these is usually less than two to four months, or as Kuwayti et al. report, about fourteen weeks after the onset of the first symptoms.[1,5,10]

The generally poor prognosis, plus a high mortality and morbidity following radical surgery, has no doubt discouraged most surgeons from taking an aggressive approach to this disease—a disease, one must realize, which is seldom diagnosed preoperatively. However, there now are appearing a number of reports of relatively long term survivals, and even of possible cures by radical surgery. Jordan reports in his series one out of four patients who, undergoing pancreaticoduodenectomy, was living over five years, and others report survivals of 31 months, over 24 months, and similar results in a few cases.[1,9]

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Resection of the duct without pancreaticoduodenectomy may, in certain instances, also produce encouraging results. Mangé and Rudie performed this operation on three patients: one died of a heart atack at 37 months, having autopsy evidence of recurrence; one was reoperated twice, and additionally was treated with 5 fluorouracil, and was living 6 years later; and one was still living at 24 months.[6] They feel that perhaps one-third of cases found at surgery are candidates for more than just palliative operations. Praderi resected one case of carcinoma of the cystic duct who was living at the time of his report 6 years, 2 months later.[7]

CASE REPORT

On September 7, 1961, a 32-year-old man was referred to me because of symptoms suggesting gallbladder disease. He had a history of nervousness and had suffered from diarrhea off and on for about six years. X-rays of the colon (Fig. 1) on several occasions had revealed signs of ulcerative colitis with skip areas, and he had been treated for this disease by cortisone and similar drugs for several years with some success. In 1959 he had had some sharp right upper quadrant pains, and when they recurred in 1960 he had been treated with anti-spasmodics with no definite diagnosis being made. In July and August 1961 he had several attacks of severe right upper quadrant pains accompanied by abdominal bloating, belching, nausea, and diarrhea. There was some pain between the scapulae but no history of jaundice. Two cholecystograms had revealed a nonfunctioning gallbladder each time.

Fig. 1. Barium enema examination of colon demonstrating feathering, pseudopolyposis, loss of haustral markings and rigidity, October 25, 1958.

On September 15, 1961, exploration was performed. No stones were found in the gallbladder, but the common bile duct was quite enlarged and therefore was explored, revealing flakes of black material, a patent ampulla of Vater and some friable pinkish tissue within the common duct. Frozen section of this tissue was uncertain. A cholangiogram showed only some narrowing of the lower common duct. Some thickening of the cecum, terminal ileum and sigmoid colon was also noted. A duodenotomy to inspect the ampulla was negative. Cholecystectomy was performed and the abdomen closed with drainage of the abdomen and T-tube draining of the common duct.

Subsequently, permanent sections were diagnosed as adenocarcinoma of the common duct (Figs. 2 and 3), and an enlarged supraduodenal lymph node removed at the time of surgery showed only hyperplasia.

On September 26, 1961, a pancreaticoduodenectomy, with removal of all but a few millimeters of hepatic duct, was performed, grossly encompassing all suspicious areas. The pancreas stump was anastamosed into the open end of the jejunum, and the stump of the hepatic duct and stomach remnant were anastamosed into the jejunum in series.

Recovery was uneventful except for a temporary pancreatic drainage, and the patient was discharged from the hospital seventeen days after surgery. He gained 27 pounds and returned to work.

In January, 1963, diarrhea recurred and x-rays were diagnosed as ulcerative colitis.

About April 1, 1965, he returned to his referring

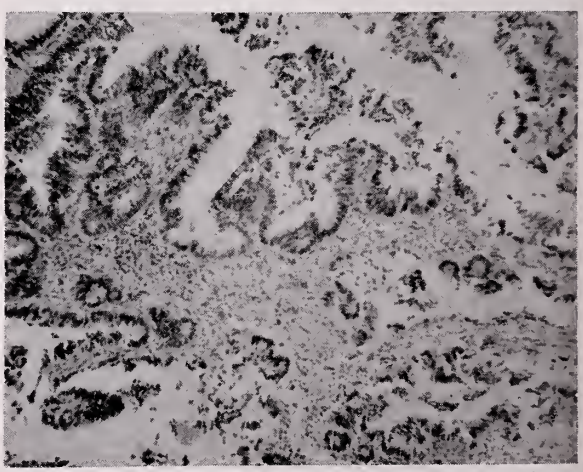

Fig. 2. Photomicrograph of adenocarcinoma from surgical specimen, September 21, 1961, taken by James F. Haynes, MD, pathologist, Carlsbad Memorial Hospital.

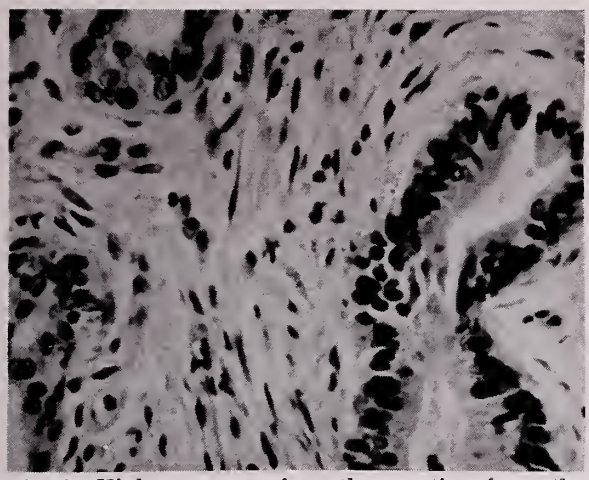

Fig. 3. Higher power of another section from the same specimen as in Fig. 2.

doctor with severe jaundice, inanition, and spiking fever which did not respond to medical measures. On April 14, 1965, exploration revealed the hepatic duct stump and the intrahepatic ducts to be obstructed by friable papillary tissue which was scooped out to restore a good flow of bile. No other gross evidence of tumor was apparent in the abdomen. Pathological diagnosis was adenocarcinoma. Postoperatively, in spite of abdominal and ductal drainage, he developed a fistula from the hepatico-jejunal junction accompanied by peritonitis. His course was stormy, but the jaundice cleared and he was eventually discharged. He returned September 3, 1965, with symptoms of intestinal obstruction and died September 9, 1965. Autopsy was denied.

Comment

The possible mechanism by which ulcerative colitis might be a factor in producing a carcinoma in the biliary system is a matter, so far, of speculation. However, Ham and Mackenzie found that seven of their thirty-two cases of carcinoma of the bile ducts had an associated cholangitis. They quote a study by Boden et al., in which some cases of pericholangitis occurred in patients suffering from ulcerative colitis. They also note the association of intrahepatic bile duct carcinoma and ascending cholangitis in infestations of the parasite, clonorchis sinensis, and mention a case of Poate, who, after twenty years of recurring cholangitis, was found at autopsy to have an intrahepatic bile duct carcinoma. Cholangitis therefore seems to be a possible etiologic mechanism in at least some cases of bile duct carcinomas. Perhaps, when more light is shed on other inflammatory noncolonic manifestations of ulcerative colitis, we will better understand the relationship of that disease to carcinoma of the bile duct.

It is to be hoped that, in the future, competent surgeons finding carcinoma of the extrahepatic bile ducts will be encouraged, in favorable cases, to attempt curative resections, with or without pancreaticoduodenectomy. It must be remembered that twenty years ago, because of a similar attitude, radical surgery was seldom attempted in cases of carcinoma of the head of the pancreas.

Summary

The association of chronic ulcerative colitis and carcinoma of the bile ducts, though not common, is probably significant.

Another case has been here reported.

An aggressive approach to carcinoma of the extrahepatic bile ducts may, in favorable situations, result in years of worthwhile palliation, and possibly cure •

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Epiphora--Frequent causes and their management

Walter J. Levy, MD, Albuquerque, New Mexico

The author presents a detailed assessment of the causes and management of epiphora. Diagnostic tests and surgical procedures are discussed.

EVERY CASE OF EPIPHORA requires evaluation based on anatomico-physiological considerations. (Fig. 1). Consequently it is of value in this communication to review briefly the functioning of the lacrimal apparatus.

The tear film is comprised mainly of the fluid from lacrimal gland secretion. A microprotein fluid layer lines the globe deep to this secretion and an oily layer, secreted by the accessory lacrimal glands in the conjunctiva and the sebaceous and Meibomian lid glands, covers the fluid, thus limiting tear evaporation. This oily secretion besides providing lubrication reinforces the capillary retention of the tear lines along the lid margins. The tears are believed to pass across to the medial side of the orbit by capillary movement and pressure under the upper lid and along its margin, as well as down the outer fornix and then under the lower lid and also along its margin. Movement of the lids in blinking transfers the tears across the cornea. The close application of the lids to the globe and the sharp posterior lid margins are important in maintaining this tear movement.

From the lacus lacrimalis the tears pass by capillary attraction together with a sucking effect from within the canaliculi through the upper and lower (mainly) puncta. The inversion and close positioning of the puncta to the globe are very significant at this time, as is the pumping action of the lids, both here,[1] and on the lacrimal sac. The puncta are thought to gape slightly periodically during these movements. The capillary attraction in the canaliculi and the sucking effect of the lacrimal sac "pump," due to the orbicularis muscle action on the sac, move the fluid into the sac. Thence, the pressure effect of the sac "pump" expels the fluid down the naso-lacrimal duct, in close proximity to the anterior ethmoidal and maxillary para-nasal sinuses, into the nasal cavity below the inferior turbinate.

Lacrimation must be distinguished from epiphora. The former is due to excess secretion of tears, while the latter is due to inadequate drainage. The commonest cause of lacrimation is an irritation within the conjunctival fornices. This might be due to a foreign body embedded in the cornea or

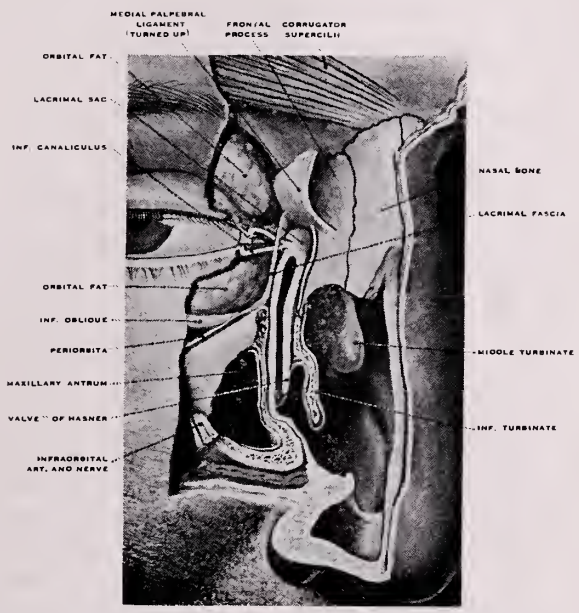

Fig. 1. Dissection to show the relations of the lacrimal canaliculi, sac, naso-lacrimal duct and nasal cavity (after Wolff[7]).

*From the Lovelace Foundation for Medical Education and Research.

subtarsally, a corneal abrasion or ulcer, thermal irradiation, gas, fluid or powder irritant. Conjunctival hyperemia, particularly in infection, is frequently irritant. Photophobia and psychic disturbances are also common producers of lacrimation. It might be remembered that psychic stimulation is thought not to produce tears prior to the age of four months.[2] Lacrimal gland disturbance by inflammation or neoplasm or drug stimulation might result in hypersecretion. All of these described above should be identifiable after careful history taking and examination of the eye and followed by appropriate treatment.

Epiphora is usually the result of incontinuity of the lacrimal drainage system because of disruption of the anatomy or mechanical obstruction. However, proper muscle tone of the lids and integrity of lid position and orbicularis muscle function are most important. A completely intact and patent lacrimal passageway can sometimes be shown, in the presence of epiphora, resulting from inadequate muscle action in the lower lid. Duke-Elder[3] calls this "atonic epiphora."

Evaluation

In evaluating epiphora, it is advisable to think of the lacrimal passageways from the punctal relation to the conjunctiva, through the canaliculi, via the lacrimal sac, down the naso-lacrimal duct into the nose, after lid tone and position and muscle function have been assessed. Traumatic disruption of the drainage system and infection and inflammation along it are the commonest causes of inadequate function. Congenital agenesis or atresia might be causes in themselves or may require a slight additional stress mentioned above to result in epiphora. Malposition of the lower lid, due to ectropion, with eversion of the inferior punctum is the commonest source of epiphora in elderly patients.

The age of the patient and the history together with a general eye examination might give a strong lead to the etiology and site of the lesion. More specific examination of the lacrimal apparatus requires palpation and adequate viewing of the lacrimal gland, assessment of the lower lid and position of the lid margins and the relationship of the

Fig. 2. The bilateral swelling, medial to the inner canthus and below the medial ligament, due to distension of the lacrimal sac, is visible (after Duke-Elder[3]).

inferior punctum to the globe as well as the condition of the punctum and conjunctiva. The lower punctum should not be visible even on upward gaze. A swelling medial to the inner canthus (Fig. 2) is usually due to sac distension if it is predominantly below the medial ligament. Such a swelling is diffuse and pressure over the site (also in the absence of swelling) will result in regurgitation of fluid from the puncta. The fluid may be clear, but is often mucinous, and contaminated with pus if secondary infection has occurred. Disturbance in nasal architecture due to fracture or septal deviation should be looked for, as well as the state of the nasal mucosa. Transillumination of the nasal sinuses might be helpful at this juncture.

Schirmer's Blotting Paper Test[4] provides a good assessment of the state of lacrimal secretion, and it should be remembered that tear secretion is less in the elderly.[2,3] A piece of fine-weave filter paper is cut in a strip 5 mm x 35 mm and the proximal 5 mm are bent to an acute angle. This small portion is

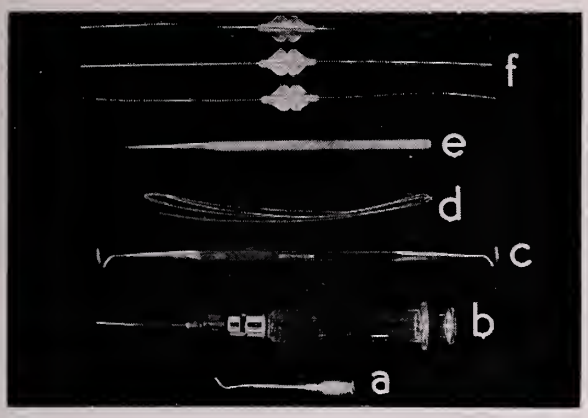

Fig. 3. Instruments for investigation and surgery of the lacrimal drainage pathways. a. right-angled cannula (short shaft); b. syringe (2 ml.) and straight cannula (for long penetration, shaft has no shoulder); c. "pig-tail probe"; d. polythene tubing —0.3 mm.*; e. punctum dilator; f. various sizes of Bowmans probes.*

placed inside the lower lid at the outer canthus. The normal secretion in a young adult is 15 mm in 5 minutes (the length wetted after one minute will give a fairly accurate idea in order to save time). Then topical anesthetic (Ophthaine†) is instilled into the lower fornix of each eye and the test is repeated to assess the basic secretion without local stimulation—approximately 20-30 mm in 5 minutes.

Next, irrigation of the lacrimal sacs with saline (Fig. 3) is performed. This allows reassessment of the puncta, patency of the canaliculi, independently, the common canaliculus if present, the lacrimal sac and the naso-lacrimal duct. Stricture of the canaliculus and degree of occlusion can be felt with the cannula of the syringe. Clear reflux through the upper punctum while irrigating via the lower will suggest common canaliculus or sac-junction obstruction. In such a case the upper punctum should be occluded with a dilator while the lower canaliculus is irrigated, possibly with some pressure. Filling of an atonic chronically inflammed sac might be noted and regurgitation with an admixture of mucus would be confirmatory; the site of trouble being at the junction with the naso-lacrimal canal. Irrigation through the superior canaliculus might be achieved when the inferior passage is occluded. Although I do not believe that the upper passage is of much help in eliminating the tears in such a case, this approach might provide valuable information about the patency of the sac and canal. Care in using pressure in the irrigation is needed, apart from obvious considerations of gentleness, as occasionally a canalicular or sac obstruction might have a ball-valve effect, resulting in a very distended sac which can only be relieved surgically.

The primary dye test[1] is performed by instilling one drop of one per cent fluorescein solution in the conjunctival sac. A small cotton-tipped applicator, moistened with a mixture of 1:1000 epinephrine and 5 per cent cocaine solution, is introduced into the inferior meatus of the nose at intervals from one to five minutes. If the cotton comes out stained with the dye it is a positive test.

A positive primary dye test proves that there is no obstruction in the lacrimal passages and the epiphora is due to hypersecretion. If, after three to five minutes, there is no dye on the cotton, it is a negative test.

The secondary dye test is performed if the result of the primary dye test is negative. The dye is washed from the conjunctival sac, the patient's head is tipped forward far enough for fluid to run out from the anterior nares into a white basin. One cubic centimeter of normal saline is injected by a lacrimal cannula that has been inserted as far as the internal common punctum. If the fluid comes out of the nose stained with the dye, it is a positive test.

A positive secondary dye test proves that there is no obstruction at the punctum nor in the canaliculus and that the lacrimal pump is functioning as far as the tear sac which fills with the dye. The partial obstruction is in the nasolacrimal duct. If there is no dye in the fluid from the nose, it is a negative test.

A negative secondary dye test proves that no dye has reached the tear sac; the primary cause of the epiphora lies in the canaliculi.

Finally, irrigation of the lacrimal passages with radio-opaque dye and viewing through a fluoroscope and image intensifier will demonstrate the anatomy of the passageways and site of obstruction, as well as any diverticula or fistulae. A permanent record with serial still- or cine-pictures can be made of the investigation. Instilling the radio-opaque dye

†Squibb and Sons, New York, New York.

Fig. 4. Eversion of the inferior punctum and slight ectropion (after Duke-Elder[8]).

into the lower conjunctival fornix before this irrigation can give a fluoroscopic view of the physiological state and efficiency of the lids and lacrimal "pump."

Patency of the lacrimal sac and naso-lacrimal canal might only be established, in the case of a proximal occlusion of the passageway, during surgery, when the sac is exposed and saline can be irrigated directly by transmural injection via the sac into the canal. Experience allows one to avoid the use of some of the tests as they can be tiresome for an elderly patient.

Eversion of the inferior punctum is common in the elderly (Fig. 4). There may be some stenosis and surrounding chronic conjunctivitis. Often the sharp posterior margin of the lower lid is lost in the medial third and the conjunctiva is velvety. My practice is to treat the lower lid with Oculentum Chloromycetin* application to the exposed conjunctiva for a few days. With the lessened inflammation and softening of the punctum, its dilation and irrigation are easier. The other lacrimal function tests can then be completed. I apply electro-cautery to the conjunctiva inferior and infero-lateral to the punctum after local anesthesia has been achieved by an injection of Xylocaine** 2 per cent subconjunctivally. I prefer the careful topical application of a few crystals of cocaine directly to the conjunctival area and two drops of cocaine 4 per cent, with adrenalin 1:1000 admixed, placed in the lower fornix while the lower lid is held away from the eye for a short time and then the cocaine is sponged away. The red-hot cautery point penetrates the conjunctiva for 1 mm at about 3-5 points. Thereafter the patient is clearly shown how to wipe away any tears from the eye by an inward and upward dabbing movement of a sponge to help roll the lower punctum in.

Stenosing occlusion of the inferior punctum may require enlargement of the posterior wall of the punctum. This is performed under local anesthesia, when 1.5 mm of the punctum and adjoining vertical portion of the canaliculus is incised and a small v-shaped or rounded opening is fashioned. It should be stressed that the old-fashioned "3-snip operation" which extended well along the canaliculus is to be avoided. The capillary action of the punctum and canaliculus is vital for the efficient functioning of the passage.

Mild ectropion is a frequent cause of epiphora, especially in the elderly. The sagging lower lid may fall away just sufficiently to destroy the capillarity of the punctum. The remainder of the passageway is usually patent. If the condition is not ameliorated early, the persistent dribbling of tears over the skin, particularly in the low-resistant tissues in senile keratotic skin, leads to excoriation and contracture with a vicious ectropion cycle following. A V-shaped excision-shortening of the lower lid margin (conjunctival half) and associated conjunctiva, with lateral hitching up of the skin half of the lid, works well. Should skin contracture be present, then a free skin-graft (the blepharochalasis of the upper lids which is invariably exhibited is an excellent donor site) will be needed to relieve the cicatricial aspect of the ectropion.

Trauma and inflammatory stricture plague the canaliculi. A contusion, tearing or laceration of the lower lid, especially when towards the medial aspect, frequently results in disruption of the passageway. The optimum time for repair is immediate and by direct suturing. The punctal portion of the canaliculus is readily identifiable; however, the nasal part invariably retracts into the depths of the contused, bloody tissues. It might be demonstrated by irrigation with methylene

* Parke-Davis and Company, Detroit, Michigan.
**Astra Pharmaceutical Products, Worcestershire, Massachusetts.

blue dye through the upper punctum and pressure over the sac. A fairly straightforward technic is to pass a "pig-tail probe"† (Fig. 3) via the upper punctum and with a little manipulation out through the distal part of the cut canaliculus. A knotted nylon thread, after it has been threaded through 0.3 mm polythene tubing (Fig. 3), is attached to the notch on the probe's end. Withdrawal of the probe causes the tubing to follow. The other end of the tubing can be introduced through the proximal part of the canaliculus in a similar manner after the probe reaches the site via the inferior punctum.[5] The ends of the cut canaliculus are then sutured directly with 6-0 chromic catgut on an atraumatic 6 mm needle.‡ Care must be taken that when the subcutaneous tissues and the skin wound are repaired, mattress sutures are used to counteract the tendency of the lower lid to pull laterally and cause the wound to gape.[6]

Entrapment of an eyelash in the lower punctum and canaliculus occasionally is a cause of epiphora, as is canaliculitis, where actinomycotic infection leads to occlusion of an inflamed punctum and canaliculus by identifiable mycelial bodies. Penicillin therapy is most effective together with mechanical removal. In the event delay before surgical correction is sought or after inflammatory stricture of the canaliculus, a formal exposure of the area will be required by an incision similar to that for dacryocystorhinostomy, but more laterally placed than plastic purists desire (Fig. 5). In the event that the offending area can be excised and the remaining portions of canaliculus can be apposed without tension or the lateral wall of the lacrimal sac can be utilized, a canaliculorraphy or canaliculocystoplasty can be completed.[1,6] Should the lesion be too extensive, a vein-auto-transplant (Figs. 6, 7) can be used to repair the passage.[5] A dacrycystorhinostomy usually has to be done at the same time. I prefer these technics to the use of Jones[1] intubation.

Chronic dacryocystitis invariably produces obstruction at the sac junction with the naso-lacrimal canal and a dacryocystorhinostomy will cure the condition. One should make use of the sac and nasal mucosae to fashion flaps for the new passage through the lateral nasal wall. In a distended atonic sac, excess mucosa should be excised. The sutured junctions should be kept apart for about 4-6 weeks by using a soft uretheral

Fig. 5. Lateral positioning of the incision for canalicular exposure also reveals osteotomy and anterior flap of nasal mucosa fashioned.

Fig. 6. Vein transplant on larger polythene tube about to be transferred to smaller tube visible at extreme left.

Fig. 7. Proximal end of vein transplant sutured to proximal canaliculus.

†Medical Workshop, Groningen, Netherlands.
‡Ethicon, Somerville, New Jersey.

catheter. This is kept in place by a deep stay-suture coming out through the skin and which is taken out just prior to removal of the catheter via the nostril.

The commonest cause of epiphora due to naso-lacrimal duct obstruction is incomplete canalisation or persistence of the distal membrane in the early postnatal months. This is relatively frequent and yet epiphora is not common in preschool and school children. The trouble is often bilateral, but may be far more pronounced on one side. The mother usually reports in the second to sixth postnatal month that the offending eye (since shortly after birth) often tears and that a mattery discharge is bothersome. Such epiphora may be noted at examination and characteristically a mucoid rather than pus deposit will be seen on the lashes, in the presence of a "white," non-inflamed eye. Pressure over the lacrimal sac usually produces regurgitation of clear fluid to muco-pus from the puncta. Although one knows that the majority of these children will spontaneously achieve an open canal eventually it will require considerable attention from the mother by sac expression to keep the sac empty and clean. Furthermore excoriation of the skin commonly occurs after a while. My practice is to demonstrate to the mother how to express the contents of the sac with a correctly positioned finger (nail cut short). This is to be done two times a day. I order the instillation of chloromycetin§ eyedrops four times a day. I request a return visit in three weeks for review. Should improvement be noted then the process is continued for a further period and success is happily acclaimed (although the duct has opened spontaneously). The pressure on the sac helps force fluid through the canal. Usually, however, the obstruction persists and I then recommend to the mother on the first or second review that probing (Fig. 3) would be advantageous. I remind her that spontaneous remission is the natural course of the disease but also inform her of the handling required. I feel probing under light anesthesia is extremely effective and almost always curative. It is advisable to warn the mother that

§Parke-Davis and Company, Detroit, Michigan.

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more than one probing session may be required. It is my experience that no more than two are needed. The first procedure may provide only partial clearance. Expression of sac contents and the use of the antibiotic drops should be continued for a period after the probing. As I never irrigate the sac in these children, there is no need for intratracheal intubation anesthesia, and the child can go home within an hour of recovery from anesthesia. In passing the probe along the passages, it is essential to use a delicate hand and carefully to follow the proper anatomical angles and directions.

Mid-third facial fractures may involve the naso-lacrimal duct and need correction by dacryocystorhinostomy. Nasal septal deflection and mucosal thickening and polyps are causes of epiphora which will probably require the assistance of an otorhinolaryngologist. Chronic rhinitis, often associated with post-nasal drip and allergic/infective sinusitis, is commonly a persistent etiologic factor in production of epiphora.

Occasionally, a patient will complain of the sensation of epiphora and in fact full investigation will reveal hyposecretion of the lacrimal glands. This pseudoepiphora is more frequent in elderly ladies who tend to have depressed thyroid secretion and depressed ovarian function. Often in this age group epiphora is present and thyroid and stilboestrol therapy alleviates the conditions with the additional therapy of Liquifilm* eyedrops three times a day in each eye in the hyposecretion cases and Zincfrin** eyedrops three times a day in each eye in those with epiphora.

* Allergan Pharmaceutical, Santa Ana, California.
**Alcon Laboratories, Inc., Fort Worth, Texas.

Summary

In summary, the emphasis is placed on the close correlation between anatomico-physiological considerations and signs and symptoms, rather than etiology. Whatever the cause, a mechanical interruption of the free passage of tears along fine channels results in almost all the conditions mentioned previously. Surgical correction of disruption at each anatomical site is usually associated with a satisfactory functional result and no cosmetic embarrassment. While most of the conditions discussed in this communication are probably best treated by a physician restricting his practice to treatment of eye diseases, the general practitioner is very often confronted with the problem in the first instance. The treatment and advice given by him will invariably have an important bearing on a successful outcome. •

ACKNOWLEDGMENTS

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Coccidioidomycosis*

Localized cutaneous lesions of disseminated type treated with Amphotericin B and fulguration

Nicholas H. Zeller, MD, Albuquerque, N. M.

A case report is presented with emphasis on diagnosis, management and drug toxicity.

Coccidioidomycosis occurs in endemic form, albeit usually subclinically, within certain areas of the United States corresponding to the Lower Sonoran Life Zone by climatic characteristics, and encompassing in spotty fashion parts of California, Arizona, New Mexico, Texas, Nevada and Utah.[1] Ophuls in 1900 correctly identified the causative organism as a fungus rather than a protozoan, as was formerly believed. A few years later he reviewed thirteen cases of coccidioidal granuloma recognized to that time.[2] Knowledge of coccidioidal infection was limited to descriptions of the advanced stages with granulomatous, multisystem involvement, until study of the natural course of the disease with recognition of the primary pulmonary infection was begun by Dickson and Gifford.[3,4] Comprehensive reviews have subsequently been published covering all aspects of human infection with *Coccidioides immitis*.[5-9] Diagnostic and prognostic usefulness of the coccidioidin skin test was reported by Smith, et al., in 1948,[10] and similar extensive evaluation of precipitin and complement fixing serologic reactions in coccidioidomycosis was compiled by Smith, Saito and Simons in 1956.[11]

*From the Department of Medicine, University of New Mexico School of Medicine, and the Medical Service, Veterans Administration Hospital, Albuquerque, New Mexico. Dr. Zeller is Instructor in Medicine at the University of New Mexico School of Medicine and Assistant Chief, General Medical Service Section at the Veterans Administration Hospital.

With the discovery of the antifungal antibiotic Amphotericin B in 1956,[12-14] there was available for the first time an effective, although potentially toxic, agent for use in certain types of coccidioidal infection. Indications for treatment with Amphotericin B, dosage and routes of administration, duration of therapy, and beneficial results and limitations of treatment have been fairly well established for coccidioidomycosis as well as for other systemic mycoses against which the agent is effective.[9, 15-18] The significant nephrotoxicity associated with Amphotericin B therapy, which appears to be dose related, is a limiting factor in its use.[19-22] The renal damage, which may be irreversible and even fatal,[9, 23] although not a deterrent to use of the drug in selected conditions, makes careful regulation of its administration essential. By utilizing Amphotericin B as prophylactic therapy against possible dissemination in certain instances of primary coccidioidomycosis, or as "coverage" therapy before and after surgical procedures (such as excisions of pulmonary lesions, drainage of abscesses or sinus tracts, etc.) it is possible to give shorter courses of the drug with resultant smaller total dosage.[9, 24] There is thus less likelihood of producing permanent renal damage.

The case reported is one of a Negro male with localized cutaneous lesions of the disseminated type treated with low dosage Amphotericin B before and after fulguration of the lesions. The clinical result was excellent, and a favorable serologic response was obtained.

CASE REPORT

I. J., a 43-year-old Negro male, was admitted to the Veterans Administration Hospital, Albuquerque, New Mexico, for the first time on December 23, 1965. About two months prior to admission, without antecedent trauma, he noted a small "nick" in the skin of the left side of the face just anterior to the ear. Although partial healing would at times occur, there was gradual enlargement of the lesion, and he could occasionally express a small amount of white exudate from the area. The lesion was not painful and there was no associated lymph node enlargement apparent to the patient. He had no constitutional symptoms, and he had received no treatment prior to hospitalization. He had resided in the Los Angeles area for approximately six months prior to the appearance of the skin lesion, and during that time had traveled in the San Joaquin Valley region of California on more than one occasion. He denied any symptoms referable to a respiratory or flu-like illness during this period. He worked as a union business representative, and at the time of the present hospitalization had been on his way to the eastern part of the United States. The only significant feature of his past history was that he had been treated for primary syphilis in 1946, with penicillin, and subsequent serological tests for syphilis were negative.

Physical examination revealed a well-developed, well-nourished male of about stated age, who did not appear ill. He was afrebile. His weight was 150 pounds, representing his average. Just anterior to the left ear there was a somewhat oval, verrucous, hyperpigmented, slightly tender lesion measuring approximately 12 mm. in diameter. Near this lesion were two smaller discrete hypertrophic plaques. None of the lesions showed evidence of ulceration. A few small hard "kernels" were palpated subcutaneously just below the angle of the mandible on the left. Remainder of the examination was negative with no significant lymphadenopathy and no visceral organomegaly.

Initial laboratory data revealed a leukocyte count of 4200 per cu mm. with 47% lymphocytes and 6% eosinophils. Hematocrit was 42% and hemoglobin, 14.5 grams. Sedimentation rate was 23 mm per hour. Urinalysis was normal. Blood urea nitrogen was 10 mg %, fasting blood glucose, 90 mg %, and there were normal values for serum sodium, potassium, chlorides and carbon dioxide combining power. Serum protein electrophoresis was normal. Liver function studies, which included sulfobromophthalein retention, serum cholesterol, bilirubin, thymol turbidity, alkaline phosphatase, glutamic oxaloacetic transaminase and cephalin flocculation, were normal. Serologic test for syhilis (VDRL) was negative, and spinal fluid examination was normal. Chest x-ray showed small hilar calcifications but was otherwise negative, as were x-rays of the skull and facial bones and a metastatic bone series. Electrocardiogram showed no abnormalities. Intracutaneous tests were negative for blastomycosis, histoplasmosis and tuberculosis, and positive for coccidioidomycosis (1:100 dilution) with a 10 mm. area of erythema and induration. The latter was repeated approximately two weeks later, and showed a 15 mm. area of similar reactivity.

During the first two weeks of hospitalization several more small papular lesions appeared near the original lesion with no apparent change in the appearance of the pre-existing ones, and no change in the patient's asymptomatic clinical status (Fig. 1). On January 17, 1966 excisional biopsy of one of the smaller satellite lesions was performed. Microscopically the lesion contained diffuse aggregates of acute and chronic inflammatory cells as well as multinucleated giant cells. Considerable eosinophilia was present. An occasional giant cell contained a well-defined coccidioidal spherule with endospores. Culture of the lesion was positive for *Coccidioides immitis*. Serologic tests for coccidioidomycosis showed a negative precipitin reaction and a positive complement fixation reaction (2+) in a 1:64 dilution.

Inasmuch as the cutaneous lesions were typical of disseminated, though localized disease, and because of the patient's race and significant elevation of the complement fixation titer, it was decided to treat him with Amphotericin B* in low total

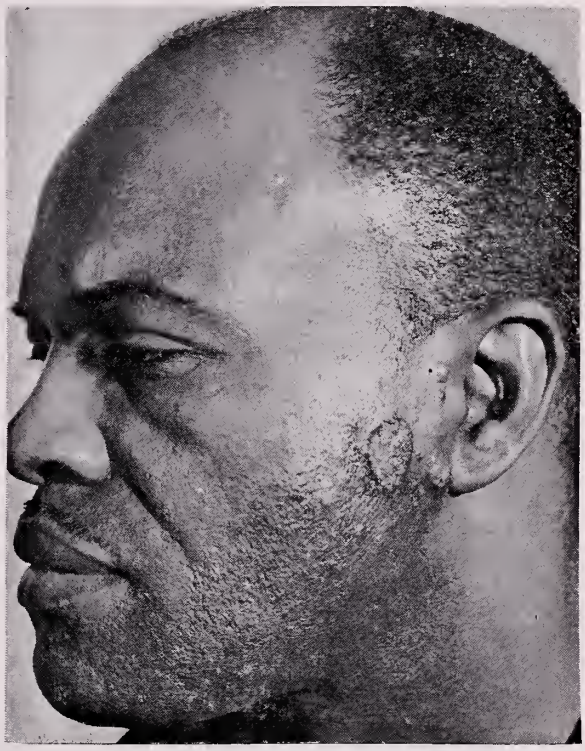

Fig. 1. Appearance of coccidioidal lesions in January, 1966 prior to treatment.

dosage before and after fulguration of the lesions. Treatment was begun on 2/23/66 and completed on 5/16/66, the patient receiving 1.020 grams of Amphotericin B intravenously during that period. Within a week after starting therapy significant regression in the size of the lesions was noted. On

*Fungizone—E. R. Squibb and Sons.

3/29/66 fulguration of the small remaining lesions was performed. Coccidioidal complement fixation titer was 2+ at a 1:16 dilution at the conclusion of treatment and positive at a 1:8 dilution only at the time of discharge in early July, 1966. The patient's appearance after treatment is shown in Fig. 2. Telephonic communication with the patient in October, 1966 indicated that he was well, with no new lesions or symptoms. Unfortunately, future attempts at contacting the patient for purpose of follow up evaluation were unsuccessful.

Amphotericin B was administered utilizing the procedure recommended by Winn[11] which included

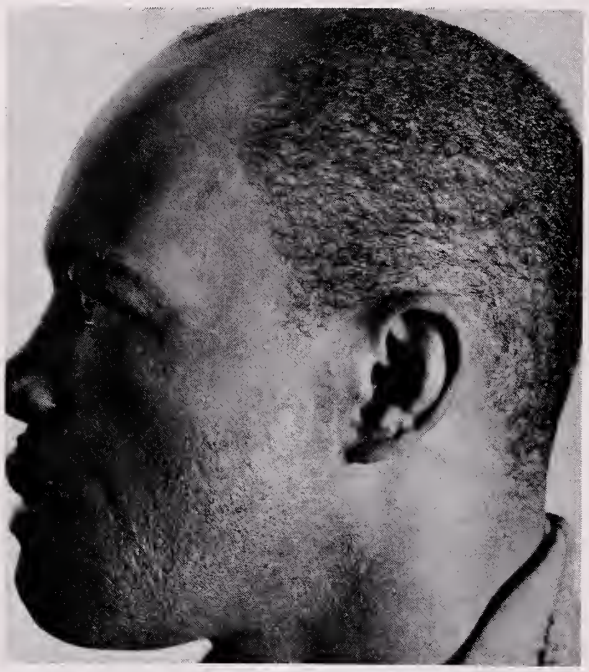

Fig. 2. Appearance in June, 1966 after completion of therapy.

the cut-off technic to flush the infusion system frequently, a six-hour period of administration, small initial dosage, small amounts of hydrocortisone intramuscularly, heparin sodium in the infusion bottle, and the use of aspirin and an antihistamine preparation prior to each infusion. The maximum dose given was 50 mg at intervals of 48 hours except where the appearance of nephrotoxicity made temporary cessation of therapy necessary. Side effects were minimal. Mild nausea, malaise, and headache occurred infrequently during the early weeks of treatment and a localized thrombophlebitis occurred once.

Significant evidence of nephrotoxicity was encountered. Serum creatinine was less than 1 mg% and 24 hour endogenous creatinine clearance values were between 130 and 160 ml per min. prior to start of therapy. Temporary interruptions in treatment were necessary for periods varying from 5 to 18 days (usually less than one week) because of reductions in creatinine clearance which reached values as low as 47 ml per min. Treatment was not reinstituted until the clearance value approached pre-treatment levels. Serum creatinine concentration elevations did not parallel the reduced clearance values as a good indication of renal toxicity. Urinary abnormalities were common throughout the treatment period consisting of albuminuria, microscopic hematuria, pyuria and cylindruria. A tendency to formation of a dilute urine became apparent as treatment progressed, whereas prior to treatment routine morning urine specimens showed specific gravities as high as 1.036. Urine concentration tests just prior to discharge in July, 1966 still showed evidence of impaired concentrating ability, although urinalyses were normal and creatinine clearance was 133 ml per min.

A normocytic, normochromic anemia gradually developed during the therapy, attributed directly to the Amphotericin B administration. Therapy was not interrupted at any time solely because of the anemia. The hematocrit reached a low level of 24.5% and hemoglobin 8.6 grams, just prior to completion of treatment. Sternal marrow was hypoproliferative with a myeloid-erythroid ratio of 4:1, and showed a slight increase in plasma cells and abundant hemosiderin. No specific treatment of the anemia was given and the hematocrit rose gradually to 35% at time of discharge.

No other evidence of toxicity was noted. Serial liver function studies remained normal and no evidence of hypokalemia developed. An upper gastrointestinal x-ray series was normal, and stool examinations were negative for occult blood. Serial chest x-rays remained unchanged; an intravenous pyelogram performed in June 1966 was normal; and repeated electrocardiograms showed no abnormalities. Weight at time of discharge was 145 pounds and the patient was asymptomatic.

Discussion

Coccidioidal infection is produced by inhalation or inoculation of the arthrospores of the vegetative phase of *Coccidioides immitis*. The highest incidence of infectivity corresponds to the dry, dusty summer period which favors wind-borne transmission of the fungus in an endemic region. Within the human or animal the parasitic phase develops with formation of the characteristic doubly contoured spherules which reproduce in the tissues by endosporulation. Person to person transmission via respiratory secretions has not been reported, but theoretically might occur as the mycelial phase of the fungus has been found in the lungs of some infected patients, and thus could be a source of the infectious arthrospores.[6] Interhuman transmission via growth of the fungus on a cast covering a draining coccidioidal lesion has been reported.[25]

Prolonged exposure is not required for infection, and brief contact with fungus-containing dust during travel through an endemic region may be sufficient to cause infection. Among non-immune persons residing in an endemic area an infectivity rate, as manifested by development of sensitivity to intradermal coccidioidin, approaching 25 per cent per year is possible, and ultimately nearly 100 per cent of such a population would be reactors.[26]

In approximately 70 per cent of those acquiring a primary pulmonary infection the process is subclinical and no medical attention is sought. In the remaining 30 per cent respiratory symptoms with cough and chest pain occur, and chills, fever, malaise, headache, muscular soreness and arthralgia are present in varying severity. Chest x-rays may show changes consistent with a penumonitis with or without evidence of hilar adenopathy. Skin lesions of erythema nodosum or erythema multiforme develop two or three weeks following the initial symptoms in 25 per cent of cases, predominantly females, and within three to four weeks a positive reaction to intradermal coccidioidin is present. In most patients all manifestations of the primary infection will subside spontaneously with only symptomatic therapy, although x-ray changes may persist for weeks or months. A small number will show progressive pulmonary disease, and about 5 per cent develop residual pulmonary lesions consisting of thin-walled cavities or coccidioidal granulomata.[8] Initial infection usually confers lasting immunity, although a second exposure of sufficient magnitude may cause exogenous reinfection.

Dissemination following primary coccidioidal infection occurs in about one of every 1000 cases, with Negroes showing a much greater susceptibility to dissemination.[8] Pregnancy may favor dissemination, as well as steroid therapy, although the latter has been used in small doses to suppress the allergic manifestations associated with primary coccidioidal infections without any apparent untoward effects. Untreated disseminated coccidioidomycosis is associated with a mortality approaching 50 per cent. It is usually multisystemic, although the meninges[8] or the skin[27] may be the only manifestation of dissemination in a particular case. In 1946 Forbus and Bestebreurtje reported a pathologic study of 95 cases of the disseminated type indicating the frequency of involvement of the various organ systems. Following pulmonary and lymph node extension, spleen, skin and subcutaneous tissues, liver, kidneys, bones, meninges, adrenals, and myocardium were involved in decreasing order of frequency.[5]

Proper utilization of the precipitin and complement fixing serologic reactions is most helpful and necessary in assessing the significance of the infection, need for, and response to, treatment. Although mild or subclinical primary infection may not show a serologic response, percipitins will appear within three weeks in the majority of patients with symptomatic infection, and are usually no longer demonstrable after several months. Complement fixing antibodies appear later than the precipitins and persist longer. In asymptomatic residual pulmonary lesions serologic reactions are of value diagnostically only if positive. Significant titers of complement fixing antibodies are present in practically all cases of disseminated coccidioidomycosis, and skin reactivity is frequently no longer present. A complement fixing titer of 1:64 or higher is indicative of dissemination, and changing titers are useful in evaluating treatment response or failure. Complement fixing antibodies are present in the spinal fluid only if meningitis is present, and thus are diagnostic. Immunodiffusion tests using portions of *Coccidioides immitis* extracts have more recently been described, with the same general applicability as the precipitin and complement fixation reactions although more quickly performed.[28, 29]

The fungus may be recovered on occasion from sputum, though more often from material obtained at time of biopsy, excision, or drainage of coccidioidal lesions. It gives a characteristic fluffy, white growth on Sabouraud's medium, and additional confirmation may be obtained by guinea pig or mouse inoculation. Biopsies show tubercle formation and foreign body giant cells. Appropriate staining will demonstrate the spheres of *Coccidioides immitis*.

Criteria for diagnosis of primary cutaneous coccidioidomycosis were formulated by Wilson, et al., in 1953.[30] Included were a history of inoculating trauma and absence of preceding pulmonary infection, appearance of a characteristic chancriform lesion with regional lymphadenitis following a short incubation period (1-3 weeks), and spontaneous healing of the cutaneous manifestations within a few weeks. In addition the syndrome should be characterized by positive intradermal and precipitin reactions, and complement fixation reaction in low titer only. Long considered a rather benign disease, Winn has recently shown the potentialities for dissemination from a primary cutaneous focus.[31]

Specific therapy with Amphotericin B is indicated in progressive pulmonary infection with increasing elevation of the complement fixation titer, or when associated with factors favoring dissemination, such as dark-skinned race or pregnancy. Instances of primary cutaneous coccidioidomycosis in which there is evidence of impaired resistance with significantly elevated complement fixation titers should probably also be treated. The presence of disseminated coccidioidomycosis, in spite of its variable course, is practically always an indication for treatment.

Early studies with Amphotericin B have generally shown that the oral route of administration is of little value with poor absorption and inadequate blood levels of the drug obtained. Intramuscular administration is also ineffective and poorly tolerated by the patient. Intravenous Amphotericin B administration has become the method of choice, in conjunction with intrathecal administration in cases with meningitis. Optimum dosage is around one mg per Kg of body weight, administered at 48-hour intervals, this level being attained by gradual increments. Duration of therapy is usually governed by the clinical response and the fall in complement fixation titer, although renal toxicity may necessitate termination before a serologic "cure" is obtained. Treatment is customarily for shorter periods when Amphotericin B is used for "coverage" or prophylactic therapy, and markedly prolonged, though intermittent, with meningeal involvement.

Side effects of intravenous Amphotericin B administration are frequent, including fever, chills, headache, malaise, nausea and localized thrombophlebitis. They can be minimized by employing the "cut-off" technic, supplemental use of aspirin, antihistamines and small doses of hydrocortisone and heparin sodium. The major toxic effects of Amphotericin B are hypokalemia, anemia and renal damage. The hypokalemia, which may be related to nephrotoxicity, can reach very low levels requiring oral or intravenous potassium administration. Anemia is normocytic, normochromic, and if sufficiently severe is corrected with transfusions. The renal damage is the most important of the toxic effects and appears to be related to total dosage of drug administered. Clinically, abnormalities of urine, consisting of proteinuria, microscopic hematuria and cylindruria, appear soon after therapy is begun. Elevations of blood urea nitrogen and serum creatinine concentrations follow, but for purposes of following the degree of worsening or improvement of renal function, frequent determinations of the endogenous creatinine clearance are much more accurate.[32] Histologic toxic changes are glomerular and tubular, with nephrocalcinosis being frequently present. Renal damage after administration of a large total dosage of Amphotericin B may be progressive even after cessation of treatment, as gradual release of the drug from body tissues causes prolonged effect on the kidney. Minute amounts of Amphotericin B have been demonstrated in the kidneys of one patient a year after treatment was terminated.[21]

Summary

A case is reported of disseminated coccidioidomycosis, with lesions limited to the left facial region, which was treated with low dosage intravenous Amphotericin B and fulguration of the lesions. The clinical result was excellent with a favorable serologic response.

Nephrotoxicity of Amphotericin B was apparent during the period of drug administration, and evidence of impaired concentrating ability of the kidneys was present two months after completion of treatment. •

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The author wishes to thank Willam A. Winn, MD, for his helpful suggestions regarding the management of this patient.

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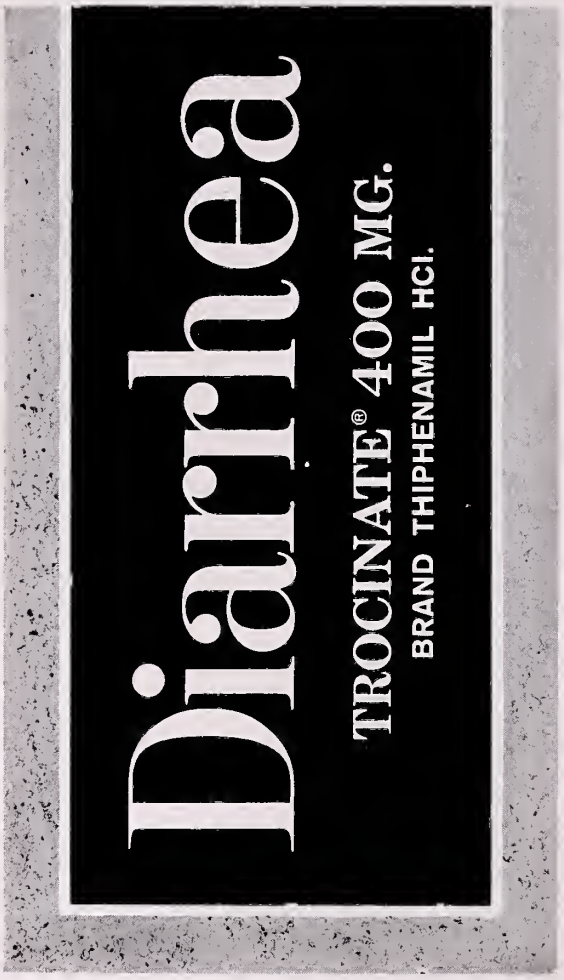

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Leiomyosarcoma of spermatic cord*

Report of a case and summary of the literature

Stanley Weitzner, MD, Albuquerque, N. M.

NEOPLASMS OF THE SPERMATIC CORD are infrequently encountered. The spermatic cord is rarely the site of leimyosarcoma. The first case was recorded in 1907 by Patel and Chalier,[1] and since then, twenty additional cases[2-17] have appeared in the literature.

A case of leiomyosarcoma of the spermatic cord with 5-year survival and a summary of the literature are presented.

CASE REPORT

A 51-year-old Caucasian male was hospitalized for a painless, minimally tender, slowly growing mass of golf-ball size in the right scrotum of one year's duration. The patient had gonorrhea treated with penicillin in 1944 and a right hydrocelectomy in 1957.

Physical examination disclosed a hard 7.0 x 5.0 cm. mass in the lower portion of the right spermatic cord, which was distinct from the testis, and a 2.0 x 1.5 cm. soft nodule near the right external inguinal region. The remainder of the physical examination was not remarkable.

Routine clinical laboratory studies were within normal limits. An intravenous pyelogram disclosed good function, but with tortuosity of the ureters and suggestion of dilatation of the right pelvis.

A right orchiectomy with high ligation of the cord was performed on February 19, 1962.

Pathology

Specimen grossly was a testicle with attached spermatic cord measuring 21 x 15 x 6 cm. in greatest dimensions. 1.5 cm. above the testicle was a multilobulated, firm, encapsulated tumor measuring 7 x 5 x 6 cm. with a superior distinct 1.5 x 1.5 cm. similar nodule. The cut surface of the tumor was gray-white with scattered foci of necrosis (Fig. 1). The testis and epididymis measured 5 x 3 cm. and externally and on cut surfaces were not remarkable.

By microscopic examination the neoplasm consisted of interlacing fascicles and whorls of smooth muscle fibers with small scattered foci of fibrosis and necrosis. The nuclei, for the most part, were moderately pleomorphic with varying degrees of hyperchromaticity. There were occasional mitotic figures and giant nuclear forms (Figs. 2 and 3). In several areas, the nuclei were fairly uniform and with no remarkable degree of polymorphism. Masson trichrome stains confirmed the tumor to be of smooth muscle nature with scattered foci of fibrosis.

Fig. 1. Gross appearance of cut surface of spermatic cord neoplasm and the testis.

Sections of testis, epididymis and vas deferens were not remarkable.

The diagnoses: Leiomyosarcoma, low-grade, of right spermatic cord. Testis, epididymis and vas deferens, right.

Course: A bilateral, radical retroperitoneal lymph node dissection and appendectomy were performed ten days later. No tumor was noted grossly or microscopically in the lymph nodes. The postoperative course was not remarkable. The patient was discharged two weeks later.

The patient is alive and in fair health as of mid-April, 1967, five years and two months following surgery. There is no apparent recurrence of tumor or metastasis.

Comment

The histopathologic features of the neoplasm in this case were those of leiomyosarcoma and the presence of only an occasional mitosis indicated low-grade malignancy.

*From the Department of Pathology, V. A. Hospital and University of New Mexico School of Medicine, Albuquerque.

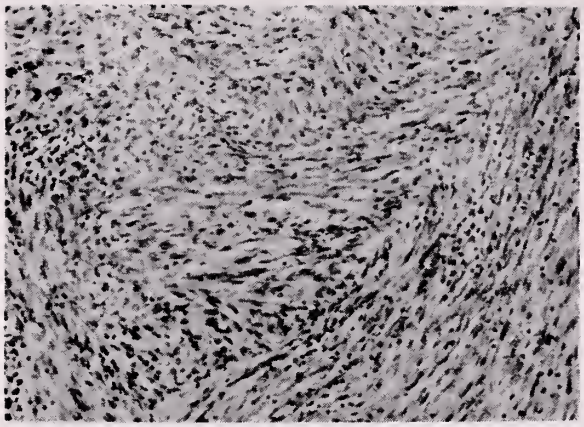

Fig. 2. Section of tumor showing typical pattern of interlacing fascicles of neoplastic smooth muscle fibers. H&E X 64.

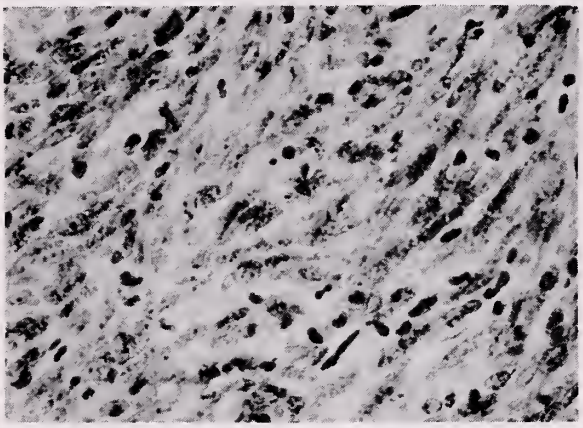

Fig. 3. Higher power showing prominent nuclear pleomorphism of smooth muscle fibers. H&E X 250.

Stout[18] and Novak[19] in respective studies of leiomyosarcoma of the superficial soft tissue and the uterus have both shown that the higher the degree of mitotic activity the greater the clinical malignancy of the tumor. The low-grade of malignancy in this case is supported by the survival of the patient with no evidence of recurrence or metastasis five years following surgery. Also, the patient described only slight increase in size of the tumor during the one year he noted its presence. In several areas the neoplastic cells were essentially uniform and devoid of remarkable nuclear pleomorphism or anaplasia, thus appearing to be more representative of leiomyoma than leiomyosarcoma. It is, therefore, postulated that the leiomyosarcoma in this case arose in a pre-existing leiomyoma. Several previous authors have suggested a similar origin in their cases.[6, 8, 12, 14, 17] It is noteworthy that leiomyosarcomata of the uterus with good prognosis are those considered to have developed in a leiomyoma and with few or no mitoses.[20]

The exact site of origin of leiomyosarcoma of the spermatic cord is unknown. Whether it arises from undifferentiated mesenchymal cells or smooth muscle cells in the cremaster muscle, the vas deferens or abundant blood vessels is debatable. The period of major growth of the neoplasm, if not its duration, in this case may be fairly well estimated to be a maximum of five years, since the patient underwent right hydrocelectomy four years prior to the discovery of the right spermatic cord tumor, or five years prior to its excision. It is most unlikely that a neoplasm of significant size would have passed undetected at hydrocelectomy or in the immediate postoperative period.

The age of the twenty-two patients with leiomyosarcoma of the spermatic cord ranges from 15 years to 78 years. Fifteen, or almost 70 per cent, occurred in the group 40-69 years of age. The other seven cases are essentially evenly distributed throughout the other decades. It is of interest that none occurred in infancy or childhood. When recorded, the right and left spermatic cords were involved in ten and six instances respectively. Seven patients were Caucasian, two Negro, and one Chinese. Follow-up information was available for seventeen cases. Of the nine patients known to be alive, three survived five, eleven and twenty-two years respectively. The other six were alive from several months to three years, and therefore cannot be considered in any long term evaluation. Six of the eight known deceased patients expired within two and one-half years following diagnosis, the other two at four and seven years respectively. A ninth patient was presumed to be dead, but no data is available. At the time of death, eight of the patients had either documented or clinical evidence of tumor dissemination. The liver and lungs, as would be expected, were most commonly involved, but the ileum, pleural cavities, pericardium, intercostal muscles and mediastinal lymph nodes were also sites of metastases. Local recurrence occurred in four of the deceased patients. Two other patients developed local recurrence early, but following excision were

known to be alive at three years and twenty-two years respectively.

The treatment has varied somewhat. When recorded, eleven patients had orchiectomy with high ligation of the cord, and five others had simple enucleation of the neoplasm initially, with three subsequently undergoing orchiectomy and high ligation of the cord. Seven of the patients also received radiation therapy and three others had retroperitoneal lymph node dissection. It is difficult to adequately evaluate any of the various modes of treatment, since the series is so small and data concerning follow-up and therapy are incomplete for some cases. The role of x-ray therapy and retroperitoneal lymph node dissection is debatable, but sarcomas metastasize by lymphatics in some instances and at least local spread or retroperitoneal involvement may be obviated by their use.

The efficacy of radiation therapy, retroperitoneal lymph node dissection, and perhaps eventually chemotherapy, in addition to orchiectomy and high ligation of the cord, hopefully will become established following study of an adequate number of cases.

Summary

A case of leiomyosarcoma of the spermatic cord in a 51-year-old man with five-year survival and no evidence of recurrence or metastasis following orchiectomy with high ligation of the cord and retroperitoneal lymph node dissection is presented. The possibility of the tumor having developed within a preexisting leiomyoma is discussed. The available data on age incidence, follow-up and therapy for the twenty-two recorded cases are summarized. •

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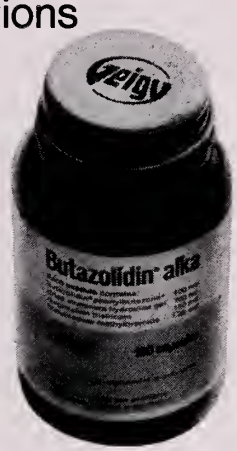

foliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

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Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. *Precautions:* Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. *Side Effects:* Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. *Availability:* Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

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SYNTEX

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A medical potpourri

Compiled by Andrew M. Babey, MD, Las Cruces, New Mexico

1. "Every patient with renal failure should have a determination of serum calcium. If a patient has a high BUN and a normal calcium, watch out. Repeat it a number of times. If he has a high BUN and calcium elevation, he probably has a disorder of calcium metabolism that may well be the cause of the renal insufficiency and may be at least partly remediable" Relman, Arnold S., M.D., Quoted from *Internist Observer,* Nov., 1964, p. 6.

2. "As a preliminary generalization it can be stated that if hypoglycemia (i.e., blood sugar below 50 mg./100 ml.) is not manifested until after the first two hours in a glucose tolerance test, it is not likely to be due to an insulinoma. In fact, if this were the only condition we were interested in, we would not need to carry the test beyond the second hour, which would save a lot of trouble. We would, however, miss alimentary hypoglycemia and reactive hypoglycemia. Again, if we only did intravenous glucose tolerance tests we would miss alimentary hypoglycemia as well as the flat tolerance curve, both of which it is important to characterize. For these reasons an oral tolerance test, lasting for at least three and preferably six hours, is preferred as the first diagnostic step." Abelson, Denis M., M.D., Hypoglycemia, *Medical Science,* December, 1966, p. 25.

3. "Most patients who have taken insulin for some time develop antibodies capable of binding varying amounts of the hormone. Therefore, when a large dose has been given it is prudent to bear in mind that the beneficial effect of a single injection of glucose may be transitory, as insulin may continue to be released from the binding sites for many hours." *Ibid,* p. 27.

4. "Unaccountable decreases in insulin requirements are sometimes seen in longstanding diabetes, and may rarely go on to apparent clinical cure. Sometimes the "improvement" merely presages the onset of the Kimmelstiel-Wilson syndrome of hypertension, proteinuria, retinitis and neuropathy. In a small number of patients we find that hypopituitarism, hypothyroidism or Addison's disease has arisen coincidentally, and removed one or more of the anti-insulin factors. A fourth, very rare cause of amelioration of the diabetic state is the development of a pancreatic insulinoma." *Ibid,* p. 27.

5. "A flat oral glucose tolerance test could be due to (1) laboratory error; (2) islet overactivity, either mild (as in early diabetes) or severe (as in insulinoma); and (2) malabsorption. *Ibid.,* p. 29.

6. "Why is it that in a large organ like the liver, infected with a virus which produces little or no necrosis of the liver, there is an astronomic increase in the serum enzyme, whereas when the same noxious influence causes a fulminant disease of the liver with destruction of the liver and atrophy of the liver, there is little increase in enzyme?

The obvious explanation is that it requires the intact viable cell infected with the virus or some other noxious influence to produce more and more enzyme, and that once the liver cell is destroyed it can no longer produce enzyme, and therefore the body fluid enzymes do not rise. Typically, clinically, one sees marked increases in enzyme in uncomplicated hepatitis and relatively insignificant enzyme rises in patients who have acute atrophy from fulminant hepatitis." Wroblewski, Felix, M.D., The Role of Enzymes in Diagnosis, *The Physician's Panorama,* May, 1967, p. 14.

7. "In the absence of evidence of bacterial endocarditis, splenomegaly in a patient with congestive heart failure should arouse suspicion of constrictive pericarditis." Resnik, W. H., M.D., Harrison, T. R., M.D., "Pericarditis," *Disorders of the Heart, Principles of Internal Medicine,* Fifth Edition, Pub.: McGraw-Hill, p. 851.

8. "Given a clinical picture resembling cirrhosis but with the added feature of distended neck veins, careful search for calcification of the pericardium by chest films, with the patient in the oblique position, should be carried out and may disclose a curable or remediable form of heart disease. Since calcification occurs in only about 50 per cent of these cases, exploration of the pericardium is justifiable if the clinical picture is suggestive enough." *Ibid.,* p. 851.

9. "The lesson to be learned is that when a patient has progressive, disabling, and unresponsive congestive failure, and particularly if he displays any of the phenomena of constrictive heart disease, however minimal they may be, the only decisive method of determining whether or not constrictive pericarditis is responsible is by exploration of the pericardium." *Ibid.,* p. 852.

10. "Tolbutamide has a half-life averaging 5.6 hours and sustains effective blood levels for 12 to 18 hours before it is converted to an inactive compound. Chlorpropamide has a half-life of 35 hours and may maintain effective blood levels for four to six days until it is excreted, still in the active form. The primary metabolic product of acetohexamide also has hypoglycemic activity. Although the combined half-life of both acetohexamide and its primary metabolite has been calculated at four to five hours, their duration of action is said to be 12 to 24 hours. Experience has demonstrated that a single daily dose of chlorpropamide or acetohexamide will generally control blood glucose levels throughout the 24-hour period. Tolbutamide, on the other hand, often requires at least two daily doses to maintain adequate control." Wood, Francis C., Jr., M.D., Williams, Robert H., M.D., *Oral Drug Therapy of Diabetes Mellitus,* G.P., Vol. XXXIII, No. 4, April 1966, p. 130.

11. " . . . Patients who are starting sulfonylureas should be followed more closely since there is a proportionally higher incidence of hypoglycemic shock during the first week of therapy. This complication has occurred abruptly, however, after over a year of apparently stable control of tolbutamide. Complicating factors in the course of the patient's general health, such as operation, trauma, starvation or alcoholism, may predispose to severe reaction." *Ibid.*, p. 131.

12. "Two aspects of hypoglycemic coma caused by the sulfonylureas should be emphasized. First, the onset may be characterized by the gradual appearance of central nervous system impairment *without* sympathetic nervous warning. In this respect, the onset of hypoglycemia is similar to that seen with insulinoma. Any patient receiving sulfonylurea therapy who develops focal neurologic signs or drifts into coma should have an immediate blood glucose determination. Second, sulfonylurea hypoglycemia may last for a week or more. Even if the patient is revived with intravenous glucose, he should be followed carefully for several days in order to prevent recurrence of hypoglycemia and development of possible fatal brain damage." *Ibid.*, pp. 131-132.

13. "One can never assume the obvious when dealing with the Maya who excelled in the impractical but failed in the practical. What mental quirks (from our point of view) led the Maya intelligentsia to chart the heavens, yet fail to grasp the principle of the wheel; to visualize eternity, as no other semicivilized people has ever done, yet ignore the short step from corbeled

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to true arch; to count in millions, yet never learn to weigh a sack of corn?" Thompson, J. Eric S., *The Rise and Fall of Maya Civilization,* 1st Ed., 1954, p. 13.

14. "The most important part of the roentgenologic examination is the demonstration of calcium and a clear delineation of its pattern by tomography or spot Bucky films. The presence of calcium within a solitary pulmonary nodule strongly (but not absolutely) suggests benignancy. This is especially true when the pattern of calcification is one of diffuse stippling, a large central core, total calcification, a calcified inner or outer ring or concentric rings. A few flecks of calcium or bizarre and eccentric patterns of calcification may be noted in malignant solitary nodules." Katz, Sol, M.D., *The Solitary Pulmonary Nodule, G. P.,* Vol. XXXV, No. 4, Apr. 1967, p. 9.

15. An important problem in each case (of coccioidomycosis) is whether or not dissemination is occurring. Continuation of symptoms with a persistent elevation of the sedimentation rate for more than six weeks along with sex and race predilection and presence or absence of the allergic skin manifestations are of help in deciding this point. In addition, a high or rising complement-fixation titer with a reversion of the skin test from positive to negative suggests dissemination." Quoted from the Eighteenth Annual Symposium of Pulmonary Diseases, Sept. 20-24, 1965, Fitzsimons General Hospital, p. 226.

16. "Knowledge is proud that he has learned so much
Wisdom is humble that he knows no more." Quoted from Cowper, William, *The Task,* Book VI.

17. "The widespread enthusiasm for anticoagulant drug therapy in myocardial infarction has extended into the field of cerebral vascular disease. However, recent studies have not supported the benefits of this therapy and the danger of possible cerebral hemorrhage in patients with hypertension is now recognized. Most individuals with cerebral vascular disease are elderly. They follow instructions poorly and often do not take anticoagulants as directed. Although anticoagulants might reduce the frequency of transient ischemic attacks, they apparently do not prevent cerebral infarction in patients with this condition. In addition, ischemic episodes (contrary to recent publicity) are relatively uncommon and studies of their natural history indicate that the prognosis is better than once believed since a stroke does not necessarily follow." Greenhouse, Arnold H., M.D., *Modern Concepts in Cerebral Vascular Disease,* G.P., Vol. XXXV, No. 5, May 1967, p. 105.

18. "This country is now spending very large and steadily increasing amounts of money and effort on medical care and health. We should review and consider what return is expected from these funds and efforts, and more particularly what return is actually received from them. Longevity and health are expected but only longevity (which has a positive, though partial, correlation with health) can be measured with reasonable accuracy. . . Longevity, measured as the average remaining lifetime, increased markedly in this country in each decade from 1900 to 1950 but appears to have reached a plateau about 1954, since when there has been no increase for males and only a slight increase for females. . . It is probable that we could either halve or double the money now being spent on health without significantly affecting our longevity." Forbes, William H., M.D., Longevity and Medical Costs, *New England Journal of Medicine,* July 13, 1967, p. 78.

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Shadow or substance

Marcus J. Smith, MD, Santa Fe, New Mexico

Apothegm

They stood aloof, the scars remaining,
Like cliffs which had been rent asunder
A dreary stream now flows between.
—Coleridge

Clinical data

A husky 17-year-old boy developed hematuria two weeks after an upper respiratory infection. Right upper quadrant and flank discomfort were present. Physical examination showed only right upper abdominal and costovertebral angle tenderness. In the past, the patient had noted ear infections and nose bleeds; an appendectomy had been performed three years earlier. One brother had recent fever and severe headaches; another brother had proved toxoplasmosis.

The urine showed full fields of red and white blood cells and a coagulase-positive, penicillin-sensitive staphylococcus was cultured. Treatment for presumed pyelonephritis was instituted, but microscopic hematuria persisted for several weeks.

Radiologic study

Intravenous pyelography showed a right hydronephrosis. The proximal half of the right ureter was dilated and a partial obstruction demonstrated. This was confirmed by the retrograde study (Fig. 1).

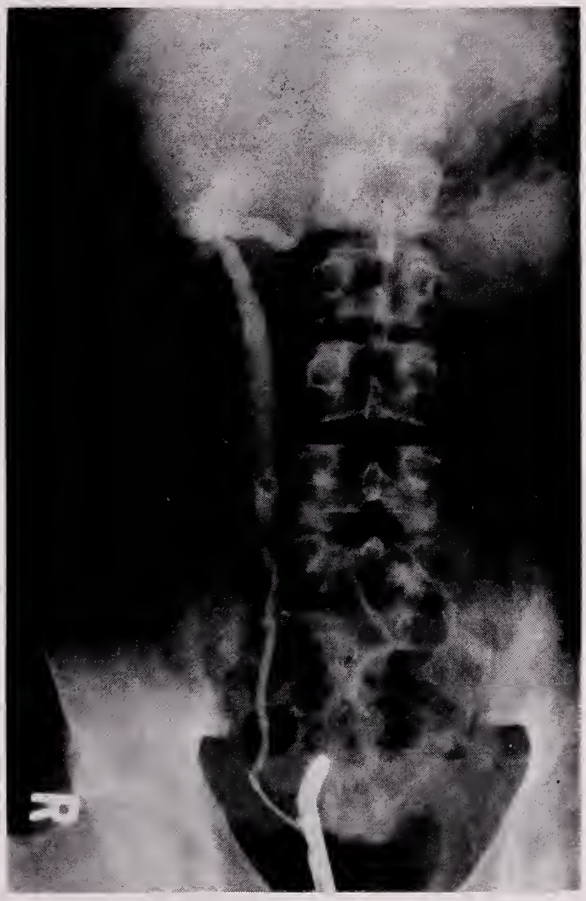

Fig. 1

Discussion

An exploratory procedure revealed an adhesive mass enmeshing the ileum, cecum and right ureter. These structures were dissected free. The post-operative course and short follow-up period were uneventful.

It seemed reasonable to infer that the appendicitis three years earlier was the source of the present difficulty. Whether a complicated appendicitis with perforation was followed by an adhesive process, or whether the ureter was injured during surgery, will never be known. However, ureteral injuries during operations are not too rare. These can occur from hemostat application, ligation or transection, excision of a segment or kinking by a ligature, according to Higgins.[1] However, of his 87 cases, none followed an appendectomy. Campbell[2] reported ureteral injuries in about 3 per cent of all gynecologic surgery. One of his cases did follow an appendectomy.

St. Martin, quoted by Higgins,[1] says that 30 per cent of cases are asymptomatic, and in 15 per cent of cases the pathological changes are recognized only after the introduction of infection, causing attacks of pyelonephritis or pyonephrosis. Perhaps this was the situation in the patient: an accidental cystitis triggering an ascending infection and producing the "dreary stream."

Acknowledgment: I am indebted to Drs. Wilfred Friedman and Valerie Friedman for permission to use this material.

REFERENCES

[1] Higgins, C. C.: Ureteral Injuries During Surgery. J.A.M.A. 199:82-88, Jan. 9, 1967.
[2] Campbell, M. F.: Urology, Vol. 1, 2nd Edit., W. B. Saunders Co., Phila. and London, 1964, pp. 822-829.

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UTAH

Minutes of the House of Delegates, Utah State Medical Association

Seventy-third Annual Session, Salt Lake City, Utah, September 12-13, 1967

FIRST SESSION

September 12, 1967

The Seventy-Third Annual Meeting of the House of Delegates of the Utah State Medical Association was called to order at 9:25 a.m. in the Empire Room of Hotel Utah, Salt Lake City, Utah, by the Speaker of the House of Delegates, J. Clare Hayward, M.D., and the following proceedings were had:

Invocation given by Ralph E. Jorgenson, M.D.

Minutes of the Tenth Interim Session which were printed in the June, 1967, issue of the Rocky Mountain Medical Journal were approved.

Report of the President—
Paul M. Clayton, M.D.

With the exception of our negotiations with the State Division of Welfare, our drive for payment on the basis of usual and customary fees has begun to see results. A year ago we suggested that you begin billing all patients on this basis whether you were paid accordingly or not, in order that data could be assembled.

On January 1, 1967, Blue Shield announced a pilot program of usual and customary fees with Hercules Powder Company as the study group. In May, 1967, an agreement was reached with the Department of Defense to cover dependents of the armed forces on the usual and customary fee basis. On August 1 Blue Shield announced the coverage of the United States Steel under a usual and customary fee program, and at the same time, they pointed out that all paid-in-full contracts negotiated after September 1, 1967, will be on the usual and customary fee basis.

The principle of payment on a usual and customary fee basis frees the doctor from the economic bondage of a fixed fee schedule, and it eliminates the tedious and time-consuming efforts required to change a printed fee schedule, particularly when in negotiations with labor groups or governmental units.

In the future if a doctor wishes to adjust his fees, and if he makes such an adjustment applicable to all patients regardless of whether or not they are covered by Blue Shield or commercial insurance, he may make the change without consulting the Fee Schedule Committee or any other Association body. If the new fee is within the range of customary charges in the area for similar services by the vast majority of physicians, it will be recognized.

A year ago from this same rostrum I stated it is time we stopped running scared. I must confess that many times during the past year I have wondered whether I could follow my own advice. The forces behind the push to socialism and socialized medicine have intensified their efforts to where to have a conservative viewpoint automatically classifies one as an extremist. In spite of the many roadblocks thrown up to divert our own plans and efforts to push government control of medicine in the name of poverty and other humanitarian fronts, we have managed to hold our head up and at least slow the rush into the waiting arms of the "all benevolent welfare state."

As I indicated in my written report, we expected to have the State Division of Welfare adopt our usual and customary fee concept. This never came about, and instead, we were asked to accept a four per cent reduction in what we have already been getting. In a recent meeting we were advised we could well expect further cuts, especially if the copper strike persists. I was also informed that the number of welfare recipients could not be reduced —that under both state and federal law, welfare, including medical care, had now become a basic right just as an elementary education has become a right. We told the Governor that we could not bind the individual doctor to accepting any cut in fee payments. Further, we explained to him that as a matter of policy, this House of Delegates last March had agreed that all doctors should continue to treat and care for all patients regardless of their ability to pay and that they would contract directly with the patient or his family concerning payments, thus bypassing entirely the Division of Welfare and its social workers.

You have heard it said that the doctor is off his pedestal, that his standing in the eyes of the community has fallen. If this is true, one reason for it is that the Welfare Division is taking credit for what the doctor does by telling his patient that the bill is paid by the state. Unfortunately, professors at the universities now teach their students that the present welfare state is true Christian charity. Nothing could be further from the truth. Christ's teachings were for the individual to follow. When the government takes our money in taxes and redistributes it among the so-called poverty group, no one benefits. If we as individuals give of our money, our time and our efforts for the benefit of others, then we both benefit, and this is true Christian charity.

In the final analysis, this is a battle for men's minds. Management of people is what this is all about. Those in political power do not believe that the majority of the people can spend their money wisely. They are convinced that a few intellectuals at the top can do better for the people than the people can do for themselves. These government planners are mentally bankrupt. Their answer for all our social problems, whether it be education, medical care, poverty or racism, is to spend more money. In their admitted philosophy, money can

cure anything, but in their unadmitted philosophy is their ultimate goal to control men's minds. That old Russian mastermind Lenin said, "As long as capitalism and socialism exist, we cannot live in peace. In the end one or the other will triumph. A funeral dirge will be sung either over the Soviet Republic or over world capitalism. There is no peaceful coexistence."

I am sure that during the past year, many of you have asked, "Why does he keep up this crusade?" Frankly, I have asked myself this very question many times, and the answer I don't know unless it is because I so deeply believe in the dignity of man and in his inherent right to guide his own destiny unfettered by laws that would make him vassal to the state for his very basic wants. Sometimes I get very lonely on this soap box, but I won't get off, that is until you younger men take up the fight and crowd me off, for remember this is your fight too. I can't fight it alone. Drew can't nor your Board of Trustees nor even this House. The fight is bigger than any one of us and we must all join in it. If we don't, we lose.

Report of Executive Secretary—
Mr. Harold Bowman

In addition to my written report, I have one comment to make. We are now reaching the point where we will be asked to elect another delegate to the AMA. It looks as if we will become a two-delegate state by the first of the year. The count is made on December 31, and there is a good possibility that we will need to elect a second delegate at the next annual session.

I would like to introduce Mr. Hoyt W. Brewster, new Assistant Executive Secretary, to members of the House. I would also like to introduce Mr. Raymond Miller, new AMA Field Representative.

Report of Delegate to AMA—
Drew M. Petersen, M.D.

As you know, the 116th Annual Convention of the American Medical Association was held in Atlantic City from June 18 to June 22, 1967. The House and Reference Committees met during this time, and there was 100 per cent attendance of delegates for both Tuesday and Wednesday, and on the final day the attendance stood at 240 out of 242. I think this proves that our colleagues in the AMA House of Delegates are extremely dedicated, hard-working men.

President Charles L. Hudson from Cleveland, Ohio, retiring president, opened the session on Sunday and I would like to quote the following remarks from his speech:

"Take the initiative and apply local solutions to local problems in order to persuade people that the proper function of government is to confine its activity to the support of private enterprise rather than to act as a competitor."

Dr. Milford Rouse, the 122nd president, also spoke at the Inauguration on Tuesday, and made somewhat the same remarks. I think their basic philosophy is fundamentally the same as ours.

One of the important subjects that was brought up was the stand on therapeutic abortion, and I think this was a very timely subject. A few of the states have already altered their legislation regarding this. I would like to read to you the established policy of the AMA:

"Recognizing that there are many physicians who, on moral or religious grounds, oppose therapeutic abortion under any circumstances, the AMA is opposed to induced abortion except when:

"(1) There is documented medical evidence that continuance of the pregnancy may threaten the health or life of the mother, or

"(2) There is documented medical evidence that the infant may be born with incapacitating physical deformity or mental deficiency, or

"(3) There is documented medical evidence that continuance of a pregnancy, resulting from legally established statutory or forcible rape or incest may constitute a threat to the mental or physical health of the patient;

"(4) Two other physicians chosen because of their recognized professional competence have examined the patient and have concurred in writing; and

"(5) The procedure is performed in a hospital accredited by the Joint Commission on Accreditation of Hospitals.

"It is to be considered consistent with the principles of ethics of the American Medical Association for physicians to provide medical information to State Legislatures in their consideration of revision and/or the development of new legislation regarding therapeutic abortion."

I would like to read a statement regarding government health programs, as passed by the AMA House of Delegates:

"The House made it a policy regarding the Title XIX program that the medical profession take a firm stand in the support of this approach in improving the health and delivery of health care services to the needy of the nation, and suggested that the medical profession seek such changes in federal regulations as will improve this program; that organized medicine take a leading role in formulating this program in the states and at the local level and that it incorporate in the planning the use of existing voluntary mechanisms such as private insurance carriers wherever feasible, utilizing the usual and customary fee principle, thus bringing within the main stream of present medical cost systems the provision of quality health care for all of America."

Regarding medicine and osteopathy, I don't think this needs too much comment except to say that apparently the medical profession, at least on an AMA level, is working diligently to actually try to convert many of the osteopathic schools into Class A medical schools, and basically in the long run absorb this practice of medicine, at least so that it will no longer be considered as a cult.

One item that came up for considerable discussion was the AMA disability insurance program.

The committee's report, as adopted, recommended that the House authorize the Board to make every effort to continue the AMA members group disability insurance program with the same premium benefits structure. I believe the carrier has been changed because Continental Casualty felt that they could no longer assume the responsibility. The contract should provide ample assurance that the disability claimants be treated equitably and justly. If the premium structure remains the same, this will be a difficult problem to solve. The carrier should guarantee benefits and premiums for a period of at least five years in order to insure the stability of the program. A continuous or ongoing review of the entire program should be maintained. The insured and other members should be made aware that such review may reveal in the future the necessity for revision of the program at the end of the five-year period. It was recommended that information regarding operation of the program, its financial aspects and the processing of claims should be available to the Board at any time. It was further recommended that an AMA disability insurance review committee should be continued and should provide a mechanism for claims review.

The AMA's policy regarding tobacco and health, and promising vigorous continuation of its measures for corrective action, was reaffirmed.

The House requested that the Joint Commission on Accreditation of Hospitals encourage the acceptance wherever possible of physicians elected or appointed by the medical staff to the Board of Trustees with full voting rights as the most effective form of liaison between the medical staff and the hospital governing authorities.

Report of Treasurer—
Ralph C. Richards, M.D.

The Treasurer's report included a review of the expenditures for the previous year, and a recommended budget for 1967-68. *The budget was approved as presented.*

Report of President of Woman's Auxiliary—
Mrs. Rex T. Thomas

A reaffirmation of the long-time purpose of the Auxiliary is inherent in the program plans and emphasis for the coming year. The stability of our organization is maintained by the firm continuity of its purposes and program. We build on the past but we are constantly searching for the new approaches and new ideas we need for interest and growth.

We constantly receive help and direction from our national officers and chairmen. This past summer Mrs. Frank Daughters, our immediate past-president, and I attended meetings of the 44th Annual National Convention in Atlantic City. We were briefed on every facet of medical auxiliary work and how it all stems from the local auxiliaries. Mrs. Asher Yaguda, in her President's Report, gave an idea of the broad scope of activities indulged in by members of the auxiliary. She noted that $600,000 has been raised by the state auxiliaries, exclusive of their donation to AMA-ERF. She also explained the new orientation course. We are especially proud to report that one of our state members, Mrs. George Gasser of Logan, Utah, was elected a director of the National Auxiliary. She has been serving as our regional director of AMA-ERF for the past two years.

On the state level, things have been moving along at a merry clip since the installation of new officers on May 15. New chairmen of committees have been appointed and have been busily engaged in collecting and readying material for our School of Instruction which was held on July 17.

Weber County Auxiliary has been working with the World Medical Relief in sending medical supplies and some drugs for distribution to the world's needy. Utah County is ready to set up a similar program as they have two doctors on the ship "Hope," and one leaving soon for Viet Nam. We will continue to help these dedicated physicians throughout the world in their fight against disease, pestilence and pain.

We feel the auxiliary as a group has much to offer, and we offer you, our doctors, assistance in whatever projects you deem necessary for the good of your profession. We truly hope this will be a rewarding period for each of us as individuals, and a year of strength and expansion for the Auxiliary as we work for the betterment of health services.

Report of President of Utah Chapter to Student American Medical Association—Mr. Roger Davis

In March of this year the Utah chapter of the Student American Medical Association held its annual elections. This year, for the first time, we decided to have a faculty advisor. Dr. Alexander M. Schmidt served in this capacity until being called to Washington; since that time Dr. Tom King, Associate Dean, has been acting as our advisor.

This year a new program was launched by the Utah chapter of SAMA which is aimed at serving the entire student body. We began last April with a seminar entitled, "Medicine and the Military." This program was designed to acquaint the medical students with their military obligations, and to also acquaint them with the programs available to them under the armed forces. The program was held at the University of Utah Union Building, which was also attended by representatives from the Army, Navy, and Air Force.

Because there has been little provision made for sexual education at the College of Medicine, on October 18 we will hold the first College of Medicine seminar on this subject. We have invited Dr. Edward Litton, Chief of Psychiatry at the Mayo Clinic, to be our guest speaker. We have also asked Dr. Howard Sharp, Chief of Obstetrics and Gynecology at the LDS Hospital, and Dr. C. H. Hardin Branch, Chief of Psychiatry at the University of Utah College of Medicine, to be participants.

During the first week in January, we are planning the first science forum in which all medical students who have worked on summer research projects will be invited to present their papers. The meeting will be conducted just as your scientific meetings. We will have a special guest speaker to highlight the event, as well as a luncheon for all the participants. At the end of the day awards will be given for outstanding papers. This is the first such seminar in the history of the school.

Next spring we are planning a medical-legal program in conjunction with the law students. We are thinking of possibly holding a mock trial with medical students acting as witnesses and the law students can try the case. This also has never been done before at the College of Medicine.

Our membership this year reached an all-time high with 84 per cent of the freshmen class signing up. We are planning an even higher percentage of this fall's freshmen. We are financed through membership dues, which are $10 per member, five of which goes to the national organization, and five of which stays here in support of all of our activities. We are appreciative of the financial contribution made by your organization to help finance our trip to the national convention in Chicago last spring. Last May our president and vice president attended this national convention. The president was elected to serve on SAMA's Medical Education Committee at that time. He has also recently returned from the annual Chapter Presidents Convention in Chicago where he was selected to be the new editor of the national magazine, "The New Physician."

On a national level the medical students are becoming more and more conscious of medical problems existing in our communities. The students want to know about the problems and want to participate in their solution. They are demanding that such information be contained in medical school curriculum. National SAMA has established an ad hoc committee to study the possibility of setting up community health projects throughout the country. We are exploring the possibilities here in Salt Lake. National SAMA is also becoming very much involved in medical education. It will sponsor the first national congress in medical education to be held this winter in Philadelphia. The American Association of Medical Colleges and the Council on Medical Education at the AMA will also participate with us.

Following discussion of several new items of business, which included a proposal patterned after the AMA to grant official representation to the specialty societies in the USMA House of Delegates, thus permitting each society one delegate, the first session adjourned for the convening of reference committees and the Board of Trustees.

SECOND SESSION
September 13, 1967

The Chairman of the Credentials Committee reported a quorum in attendance, and the Second Session was declared in order.

The Nominating Committee offered the following candidates: President-elect, Garner B. Meads, M.D., and Homer E. Smith, M.D.; Honorary President, Wilford J. Reichmann, M.D.; Secretary, Allan H. Barker, M.D., and Alan E. Lindsay, M.D.; Delegate and Alternate Delegate to the AMA, Ralph E. Jorgenson, M.D., and Drew M. Petersen, M.D.; Speaker and Alternate Speaker of the USMA House of Delegates, William R. Christensen, M.D., and J. Clare Hayward, M.D. It was moved, seconded and approved that the report of the Nominating Committee be accepted. Tellers were appointed, and delegates were instructed to cast their ballots.

A motion was then offered by C. Basil Williams, M.D., to the effect that those reports which require no official action, and are read for information purposes only, be listed by the Reference Committee by title and ordered filed without any motion being necessary. This motion was seconded and unanimously approved by the House.

Reference Committee chairmen then made recommendations pertaining to the various reports submitted by officers and committee chairmen of the USMA:

USMA President's Report

The Reference Committee unanimously urged the formation of a Utah Medical Foundation for Research and Planning which was recommended by President Clayton in order that the Association can keep ahead of governmental interference in providing medical care for the people of Utah. Dr. Clayton was also commended for his devotion and skillful handling of the Association's affairs during his year as president.

AMA Delegate's Report

Drew M. Petersen, M.D., was complimented for the fine manner in which he has skillfully carried USMA's messages to the national level, and for the excellent manner in which he had condensed so much material for the USMA Delegates' review.

USMA Secretary's Report

Russell M. Nelson, M.D., was congratulated for the excellent way in which he has carried out his function in arranging for the oustanding scientific sessions during his three years as Secretary.

Woman's Auxiliary Report

The Reference Committee congratulated Mrs. Rex T. Thomas, USMA Woman's Auxiliary President, for her devotion and ability in conducting the business of her group.

Executive Secretary's Report

Attention was called to the fine and detailed report prepared by Mr. Harold Bowman, Executive Secretary.

Advisory Committee to the Woman's Auxiliary Report

The Reference Committee recommended that President Clayton's suggestion of making the past-president chairman of this important group be affirmatively acted upon. Unanimous agreement was also expressed with Dr. Clayton's recommendation that $20 per physician family is adequate for AMA-ERF.

Measles Immunization Report

The Reference Committee expressed commendation to C. Clark Welling, M.D., for his fine efforts in the measles immunization campaign, in which he reached a 96.5 per cent effective coverage of those susceptible to measles.

Cardiovascular Committee Report

The Reference Committee declined to recommend approval of this report, indieating that physicians in the State of Utah should be kept abreast of developments in the cardiovascular area, as follows: (1) Utah physicians should be kept informed as to the current problems of rheumatic fever in Utah, and (2) physicians should be be kept currently abreast as far as the Intermountain Regional Medical Program's cardiovascular activities are concerned.

Utilization Committee Report

The chairman of the Reference Committee asked that the scope of this committee be redefined due to lack of a sufficient and informative report. It was felt in this day of Medicare and utilization committees that a detailed report should be forthcoming.

Rehabilitation Committee Report

The Reference Committee recommended that the report be returned to the committee chairman for further elarification of his ideas concerning development of the rehabilitation program here in the State of Utah. Mr. Bowman, Executive Secretary, pointed out the fact that the chairman of this committee had called several eommittee meetings, but each time he was the only one present.

Component Society Reports

The Reference Committee chairman commended the councilors for their fine reports, but singled out partieularly the Box Elder County, Salt Lake County, Southeastern Utah County and Southern Utah County Societies as having exceptionally detailed and comprehensive reports. It was also reported with dismay that the Southern Utah County Medical Society was losing a large percentage of their physician membership.

The following resolutions were approved by the House of Delegates of the Utah State Medical Association:

SEWAGE CONTROL AND WATER PURIFICATION

WHEREAS, it is recognized that good health safeguards are dependent upon water purification and sewage control, and

WHEREAS, adequate supervision of these two functions is not now possible under current laws and regulations, and

WHEREAS, some community water supplies and sewage disposals are below standard; now therefore,

BE IT RESOLVED, that the Utah State Medical Association go on record requesting that the State Health Department draft necessary regulations, or legislation, if neeessary, requiring that developers of subdivisions in suburban or rural areas be required to present plans for water supply and sewage disposal and to have such plans reviewed and approved by competent local and state engineers and sanitarians.

CARE OF WELFARE PATIENTS

WHEREAS, welfare patients under the care of the Department of Health and Welfare are often not accorded continuity of medical care due to departmental misunderstandings, and

WHEREAS, information presented to the medical profession often is in conflict with the laws and regulations, and

WHEREAS, patients are often referred to a hospital in spite of objections, and

WHEREAS, free choice of physicians at hospitals is adequately spelled out in the Medicare law; now therefore

BE IT RESOLVED, that the Department of Welfare be requested by the Utah State Medical Association to inform welfare and social workers of the proper regulations and laws pertaining to welfare patients so that physicians may continue care of such patients.

THERAPEUTIC ABORTION

WHEREAS, the American Medical Association and several of the states have updated their policy with respect to abortions, and

WHEREAS, the AMA policy is in keeping with modern scientific knowledge and contains the necessary safeguards and permits the physician to exercise his personal conscience and medical judgment in the best interest of his patient, and

WHEREAS, the following was established as policy of the American Medical Association:

". . . Recognizing that there are many physicians who, on moral or religious grounds, oppose therapeutic abortion under any circumstances, the American Medical Association is opposed to induced abortion except when:

"(1) There is documented medical evidence that continuance of the pregnancy may threaten the health or life of the mother, or

"(2) There is documented medieal evidence that the infant may be born with ineapacitating physical deformity or mental deficiency, or

"(3) There is documented medieal evidence that continuance of a pregnancy, resulting from legally established statutory or forcible rape or incest may constitute a threat to the mental or physical health of the patient;

"(4) Two other physicians chosen because of their recognized professional competence have examined the patient and have concurred in writing; and

"(5) The procedure is performed in a hospital aceredited by the Joint Commission on Accreditation of Hospitals.

"It is to be eonsidered consistent with the principles of ethics of the American Medical Association for physicians to provide medical information to State Legislatures in their consideration of revision and/or the development of new legislation regarding therapeutic abortion."

NOW THEREFORE BE IT RESOLVED, that the updated policy of the American Medical Association as contained herein be adopted by the House of Delegates of the Utah State Medical Association as policy.

PUBLICATION OF RVS

WHEREAS, inasmuch as there is a sweeping transition toward the usual, customary, and reasonable fee concept, in an effort to permit physicians to establish their own fee schedule as contrasted to a fixed fee schedule, and

WHEREAS, suceessful implementation of this fee concept in Utah with such organizations as Hercules Powder, United States Steel, dependents of military personnel, and Medicare, as well as other groups, has been aehieved, and

WHEREAS, there seems to be many favorable implications toward adoption of this type of schedule as against the fixed fee schedule, both for the physician and the patient, and

WHEREAS, sufficient time needs to be provided for proper implementation and trial of such a program; now therefore

BE IT RESOLVED, (1) That the entire membership of the Utah State Medical Assoeiation be notified that the 1963 RVS is now null and void, and (2) that all insurance carriers and other third-party payees be notified that the 1963 RVS is null and void and will no longer serve as a basis for payment of medical fees, but that usual and customary fees will be charged, and

BE IT FURTHER RESOLVED, that the 1967 State Medical Association Procedural Guide be published. This will consist of the code numbers and procedural descriptions, but will not list a relative value figure nor a conversion factor. This procedural guide will be formulated by the presently-constituted Fee Schedule Committee.

REMOVAL OF THE REFERRAL REQUIREMENT FOR THE UNIVERSITY OF UTAH COLLEGE OF MEDICINE

WHEREAS, the University Hospital is having difficulty maintaining an adequate census despite the fact that this problem does not seem to be shared by the hospitals of the area, and

WHEREAS, an inadequate census seriously impairs the ability of the University of Utah College of Medicine to carry out its function and also results in a financial deficit which is a burden to the taxpayer of the state, and

WHEREAS, it is in keeping with the highest traditions of the medical profession to aid in the education and training of medical students, nursing students, and other paramedical personnel, and the University Hospital plays an important role in this educational process, and

WHEREAS, many medical schools no longer require that patients in their teaching hospitals must be referred to the staff, and

WHEREAS, the present rule requiring referrals is one which was self-imposed by the faculty and passed by the Board of Regents in 1946 and is a rule which can be made, changed or waived only by the Board of Regents, and

WHEREAS, the waiver of this rule requiring referrals would aid in maintaining an adequate census, and thereby materially aid the school in carrying out its fuctions; now therefore

BE IT RESOLVED, that the House of Delegates go on record as recommending to the Board of Regents of the University of Utah that the present rule be modified to permit removal of the referral requirement for (1) Faculty, Staff, Employees, Students, and their dependents, of the University of Utah; and (2) emergency-room cases in which difficulty is encountered in contacting the private physician.

Members of the House of Delegates were then informed of the results of the election, as follows:

Homer E. Smith, M.D., President-elect
Wilford J. Reichmann, M.D., Honorary President
Alan E. Lindsay, M.D., Secretary
Drew M. Petersen, M.D., AMA Delegate
Ralph E. Jorgenson, M.D., Alternate AMA Delegate
J. Clare Hayward, M.D., USMA Speaker of the House
William R. Christensen, M.D., Alternate Speaker

Drew M. Petersen, M.D., incoming president, then reported that the following members of the Utah State Medical Association had passed away since the last session of the House of Delegates held on March 22, 1967:

Dean A. Moffat, M.D., Salt Lake City, Utah
Richard S. Tanner, M.D., Salt Lake City, Utah
Robert D. Carlson, M.D., Ogden, Utah
A. N. Leonard, M.D., Salt Lake City, Utah

A moment of silence was accordingly observed.

President Paul A. Clayton then presented his retiring remarks to members of the House of Delegates, stating that he would support Dr. Drew Petersen in every way possible. He then turned the gavel of the presidency over to Dr. Petersen. President Petersen's message follows:

LET'S KEEP RUNNING STRAIGHT

Drew M. Petersen, M.D.

It is indeed a privilege and honor for me to appear before you as your president for 1967-68. I only hope that I can live up to the confidence that you have shown. To me this position is one of great importance, especially in these trying times. I know that it will require a great deal of work, patience, understanding, and I only hope that we will be able to be practical, thoughtful, and perhaps come up with some sound, workable solution to some of our problems.

I want to use this opportunity to congratulate Dr. Paul Clayton, your past-president, for a job extremely well done. Gentlemen, he has served you well, with distinction, with purpose, and with a great deal of understanding and foresight. I think it would be most fitting for us at this time to show our appreciation to him with a standing ovation.

I am sure that I express the deep feeling and thanks of all the members of this State Society to him for a job well done. Also, in the Board meeting yesterday commendation was given to Dr. Russell Nelson, the Secretary, for the fine job he has done during the past three years.

As you remember last year, Dr. Clayton entitled his speech "Stop Running Scared." I think perhaps we might entitle this one as a correlary, "Let's Keep Running Straight."

I am sure that you are all aware of the great variety of laws, regulations, projects, studies, and the like which seem to be spawning utter confusion in the minds of most of us. I wonder if it would not be worthwhile to review or just summarize some of these activities that are presently in progress and which I know and you know would reshape delivery of health care as we know it today. Some of these are extremely frightening, some are irritating, some are interesting, but all of them deserve understanding so that our medical profession can maintain the quality of medical care even in the face of the most inevitable erosion occasioned by bureaucracy.

Medicine has as one of the key responsibilities in the immediate future the maintenance of quality of the product it delivers. Certainly you are all aware of the federal legislation of recent years. Let me just briefly throw out a few and see how confused you can get. Medicare and Medicaid; Public Law 89-97; Regional Medical Planning; Public Law 89-239 or the so-called DeBakey Program. Less well known perhaps is the recently-enacted Comprehensive Health Planning Legislation, Public Law 89-749, which provides money for each of the states to establish comprehensive health planning groups with at least half of the Advisory Council being composed of representatives of the consumers of health service. This consumer representation, as strong as it obviously is, is becoming extremely popular in all sorts of federal activities at the present time.

The Office of Economic Opportunity Program, OEO, or the Anti Poverty Program, is another arm. This one has just really begun but it is extremely subtle. They creep in and many times they are set up in even new buildings, new methods of delivering health care without the medical profession knowing anything about it. These are usually brought in by federal agencies and they bring in complete medical care teams to a community where they think the local resources are felt to be either inadequate or improperly placed. With the help of some physicians, the thinking and direction that these were taking were deviated to a certain extent, and they have come to somewhat of a screeching halt at the present time, but we know that they will arise again, although our planning should be in it.

We all know the part that has been played in the past, and I am sure in the future and certainly in the present situation of the AFL-CIO and many other labor organizations as regards health services. Of course, it goes without saying that both local and national medical associations have done a great deal in attempting to help guide these various programs and to institute some of our own basic ideas. Regardless of what the bureaucrats and others may think, we as doctors have more knowledge about the field of health care and its delivery than anyone else. I think it behooves them, if they are interested in maintaining the quality of care, that they perhaps listen a little more intently to the medical profession. Needless to say, it behooves us to maintain effective contact and communication with all groups, no matter how odd their suggestions or ideas may seem. In this way we can attempt to strengthen the good aspects of the program and perhaps make suggestions while staving off, as much as possible, the undesirable and unsatisfactory aspects in the light of our professional experience. We, as physicians, must not show apathy in regards to this type of legislation. It is sometimes our apathy that is the most dangerous problem of all. I am sure that any vacuums of local medical leadership can only lead to development and administration of programs by parties who did not have knowledge of the problems of the practice of medicine. So, in order to cope with the problems of tomorrow, the physician must not only be wise, but a competent physician, an office manager, an accountant, insurance agent, and a politician. He must be informed. All of us must try to maintain a good, workable knowledge regarding such legislation. We must continue to maintain information about changing patterns of medicine and medical education such as the Millis Report, the Folsom Report, the Report of the Ad Hoc Committee on Medical Education of the American Medical Association. We must learn to understand the words and concepts such as usual and customary charges, quality control, utilization, primary physician, family physician, comprehensive care, area-wide planning and a host of other terms which are new to us. This last field is one in which we as physicians must play an active role—that is area-wide planning. We must continue to study the blueprints of programs which are being developed by the many social planners and the so-called do-gooders. It seems to me that the key to the future of medicine lies in the individual participation by not a handful of physicians but by all physicians.

Let me take this opportunity to plead with not only you who are present, but to those who are not present and are members of our State Society to take an active part in your local community and in the medical affairs there and on the state level. Let us become more active in the field of health legislation, area-wide planning, medical education, and last but not least, the political field. I would like to take this opportunity to suggest to you that we all become active participants in UMPAC and AMPAC, our national and local political action committees. Many of the legislatures, not only on a local level but

on a national level, are well aware of the support, backing and strength that these political action committees have created. If you are not already a member of either one of these, I suggest that you lend not only your financial support, but your active support and encourage your other colleagues to do the same. Remember, November of '68 is just around the corner, and I am sure that '68 is going to be a tremendous year of decision. What was is past, what is is passing, but what will be it is in our power to direct.

I would like to say a few words at this time about Blue Shield. Gentlemen, whether you know it or not, our own Blue Shield plan is probably one of the better ones in the nation. We as doctors must assist our plan in helping provide medical service at a reasonable cost. I believe that our Blue Shield plan does this not only for the public, but for our profession. If it is to continue to provide this service for us and our patients, we must certainly be on guard to constantly preserve its financial integrity. It is my feeling that the usual and customary fee concept which our plan is using in negotiating with all groups can be made a workable plan if we will help make it so. I certainly hope that when we use the usual and customary fee, that the product we have is not too expensive to the Utah consumer. If we do happen to price ourselves out of the market, I am sure that our so-called friendly but at times unfriendly federal government would be most happy to interfere. Needless to say, in using the usual, customary and reasonable fee concept, Blue Shield must have some sort of a profile or a reasonable basis upon which to judge the usual and customary fee. It is my understanding that such a profile is being obtained at this time on each stockholder of Blue Shield. My personal feeling is that all participating physicians should cooperate to the utmost in making our Blue Shield even more outstanding, and also in protecting its financial integrity.

The Board of Trustees yesterday appointed a committee to study the organization of our State Medical Association as to its basic, fundamental, organizational setup. Most of the time we go from year to year and let this sort of thing slide by, but I feel perhaps now it is time for us to sit down and cogitate our present situation, its organizational structure, from the standpoint of its committees, administration, function of the House, Reference Committees, etc. As Dr. Schricker has mentioned, many of the appointed committees have duplicating functions and overlapping activities, and I think it is time we took a hard look at this.

As you know, an Assistant Executive Secretary has been appointed—namely Mr. Hoyt Brewster. There has been too much work for one man and his office staff to accomplish. We hope that the duties and activities of our executive secretary and his assistants will be well integrated with each assuming part of the responsibility.

I would like to take this opportunity to review with you some facts concerning the American Association of Medical Assistants. This organization is growing by leaps and bounds. I am sure that all of you are aware, or should be aware, of this good right arm, namely the Medical Assistants Organization. These right hands may be your medical secretary, your nurse, the administrator, the lab technician, the receptionist, or whatnot. This organization deserves our utmost support, especially on a local level. I want to take this opportunity to encourage all of you, if your assistants are not already members of this organization, to have them join. I can say without fear of contradiction that on a national level, this organization is held in very high esteem. I feel that our medical assistants do care a great deal about the private practice of medicine as we know it now, and how you as an individual physician feel. I am sure that most of them have the same feelings as we do about the private practice of medicine and the free enterprise system. I recently had the opportunity of reading a poem which was anonymously submitted by one of the members of the American Medical Assistants Group, and I would like to take this opportunity to read it to you:

"A woman knocked at the heavenly gate, her face was scarred and old
As she stood before the man of state for admission to the fold.
What have you done, St. Peter asked, to gain admission here?
I have been a doctor's assistant, sir, for many and many a year.
The pearly gates swung open wide as St. Peter touched the bell,
Come in and choose your harp my dear, you have had your share of hell."

Heaven knows what we would do without them.

Just a few words about the Utah State Medical Auxiliary. The members of this organization are the ones that are dearest to our hearts and minds. Their contribution throughout the years in aiding our cause cannot be estimated, but I assure you it has been great. I have felt for many years that we, as a State Medical Society, have not worked closely enough with our Auxiliary. The suggestion made this morning that the past president be appointed the chairman of this committee has already been acted upon by your Board of Trustees. I think that this will give us a much closer liaison with our auxiliary. I think they would welcome further direction from us and would accept it with open arms. I want to take this opportunity to thank them and congratulate them for the work that they have done without fanfare over the many years.

A few words about county medical societies. The county medical organization or societies are the local organizations which make up our State Association. The county societies and their activities should be strengthened. There should be closer cooperation and liaison between the state and county societies. Sometimes it appears that our right arm doesn't know what the left one is doing, and vice versa. Therefore I would like to encourage all the presidents and councilors of the various component societies who are present here today to make all attempts to strengthen your local organization, and if your State Society can be of any aid to you, please feel free to ask for it.

I would like to wax a bit, in closing, on some philosophical thoughts concerning these United States of America and the direction in which she is rapidly running. There was an editorial which recently appeared in the Ogden Standard Examiner, which I am sure that many of you did not have the opportunity to read. It was entitled, "There's Bound to Be a Change."

"One of these days, the good people of the United States of America will be heard and heeded.

"One of these days, not too distant, they will show in unmistakable terms that they are fed up with the slurs at home and abroad which question our honorable national intentions and goals.

"One of these days they will tire of supporting petty tyrants who insult our nation, our flag, and our honor with impunity—indeed are often rewarded for their attacks.

"One of these days Americans will tire of the sedition that too often passes for free speech in our nation, especially on our campuses.

"One of these days the point of tolerance will be passed on the street where criminality and anarchy too often erupt in the name of freedom of assembly.

"One of these days no self-respecting American, and he is in the majority, will stand for the insults to God through the attacks on religion that occur daily, or through the emergence of cults of pseudo religion that need the crutch of dope.

"One of these days good Americans will scorn the thought that there is virtue in radical behavior for the sake of being an oddball, or that there is virtue in ordinary dirt.

"One of these days good Americans will show segments of the publishing industry that filthy treatises and smut have no place in the American way of life.

"One of these days Americans will stand up in favor of capitalism which has given them individually and collectively the best life that any human has known since life began.

"One of these days Americans will insist that national resources be husbanded and meted out efficiently, not squandered on unmitigated futile sociological slop and sentimental hogwash.

"One of these days Americans will tire of the fact that they cannot even believe what their top officials in Washington say.

"One of these days they will insist that crime be punished as crime should be, so it is safe to walk the streets anywhere at any time of day or night.

"One of these days Americans will insist that our defenses be so strong that no possible question can be raised about their adequacy.

"One of these days Americans will insist that while American men are dying in Vietnam, the nation should follow a policy of winning that war as rapidly as possible.

"One of these days Americans will demand that if they are paying the piper they also shall call the tune; that their hard-earned dollars should not support generations on welfare or people who can work and will not.

"One of these days, in short, Americans will insist that we stop drifting mentally and morally and that we return to the principles that have made the United States of America strong. It will not be an uncertain trumpet.

"One of these days had better come soon because any one of these days may be much later than we believe for preserving the America we love.

"One of these days . . ."

The above was originally printed in the San Diego Union.

Our country has never needed us to get more involved than today, not just in the field of health care, but as citizens. Never has there been a greater call for the individual citizen to involve himself in his government, in its problems, in the ills of society, and in the travail of their fellow men. Don't hesitate to raise your voice for heaven's sake, for your profession's sake, and for your country's sake. Involve yourself. Don't let it be on your conscience that this dream was shattered because you failed to do your part to be worthy of your heritage. Each of us must realize the importance of what can be accomplished by performing our part of the task.

Now, gentlemen, with your help, counsel, and wise judgment, I am sure that I speak for the other officers of your State Organization when I say that we will do our best for our organization. Thank you.

There being no further business, the Seventy-Third Annual Meeting of the House of Delegates of the Utah State Medical Association was adjourned at 11:10 a.m., September 13, 1967.

USMA Briefs

Election of Dr. Wallace L. Chambers, Salt Lake City physician, to the national board of directors of the American Cancer Society was recently announced from New York City. Dr. Chambers has served as Utah's professional delegate to the national society for the past three years. As a member of the ACS board of directors, he will assist in policy making for the organization. Dr. Chambers has also served as chairman of the national committee for the Utah Division of ACS.

* * * *

Three well-known Utah physicians were participants on the progam of the American Heart Association's annual scientific meeting held recently in San Francisco. Dr. Homer R. Warner addressed the conference on "Computer monitoring of heart function in patients after surgical operations." Dr. C. Hilmon Castle, coordinator of the Intermountain Regional Medical Program, participated on a panel on the "manpower shortage in patient care." Dr. Russell M. Nelson spoke to the subject, "Chest obstruction."

* * * *

At a recent meeting of the Salt Lake Area United Health Foundation, Dr. Richard J. Nelson, Salt Lake City physician, was elected President of the organization. He succeeded Mr. H. F. Kretchman, editorial writer for the Salt Lake Tribune. The Foundation was organized in 1964 to "direct and extend the federated giving concept to various health services and agencies in the Salt Lake area."

Dr. Morrell—88—Retires (Again)

Dr. Joseph R. Morrell, prominent Ogden physician, is retiring again from medical practice. Since 1956 he has been head of the medical dispensary at Defense Depot, Ogden, which position was offered him after he had successfully prevailed in a bout with illness—an illness which had occasioned his first retirement in 1945. He had completed 40 years in private practice in Ogden at that time.

Service has been the key word in Dr. Morrell's life almost from the time he was born 88 years ago in Logan, Utah. His pre-medical training was had at the Utah State Agricultural College and he completed his medical work at Rush Medical College, receiving his degree in 1904. He recalls vividly the fact that the Ogden General Hospital at that time had a patient capacity of 35.

Dr. Morrell has served as division surgeon for both the Union Pacific and Southern Pacific Railroads and local surgeon for the Denver and Rio Grande Western. He also served as a member of the Utah Board of Examiners for over 20 years, as a delegate from the USMA to the House of Delegates of AMA, and as President of the Utah State Medical Association in 1924.

Civic interests and community betterment have also had much of Dr. Morrell's attention. Most noteworthy of these efforts were 35 years spent to obtain a full-time health unit for the City of Ogden. The present health center attests to his service in its behalf. He also received the Distinguished Service Award from Utah State University in 1958.

Hearts and Husbands

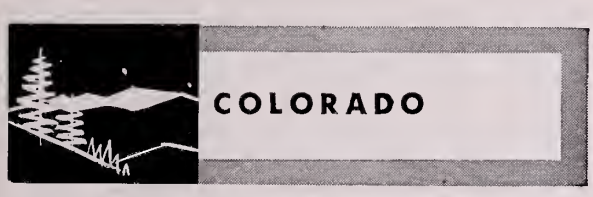
The recent appearance of Dr. Paul Dudley White in connection with the Utah Heart Association's "Hearts and Husbands" day was acclaimed by the entire community of Salt Lake City as being an outstanding event. The estimated attendance was in excess of 10,000 persons.

Dr. White delivered his message in language understandable to the lay mind which contributed greatly to the interests of his listeners. He discussed the prevention of heart attack and considered also the matters of what to do following a heart attack as it pertained to work, exercise, diet and sex. The audience was invited to submit questions, which they did enthusiastically. These were discussed by Dr. White and a panel composed of Allan H. Barker, M.D., Hiroshi Kuida, M.D., Harold V. Liddle, M.D., Homer R. Warner, M.D., and Ernest L. Wilkinson, M.D., moderator, Salt Lake City physicians.

Much favorable reaction has been in evidence since the presentation of this fine program and the Utah State Medical Association joins the community and state in expressing appreciation to the Utah Heart Association for arranging it. In addition to having provided an interesting and informative evening, it undoubtedly will result in long-range helpful contributions to the health well-being of this area, particularly as it pertains to the heart.

Patients Needed for Emphysema Study

Patients are needed for a long-term study of the role of infection in emphysema which is being conducted at the University of Utah Medical Center with financial support of the U.S.P.H.S. Patients entered into the study will have an initial intensive and complete clinical evaluation, pulmonary function tests and viral and bacterial isolation and serologic studies, all at no cost to the patient. Periodic follow-up examinations of a similar nature will be carried out both during quiescent periods and acute exacerbations for many years. Patients should be preferably men between the ages of 40 and 55 years with chronic bronchitis, i.e., a productive cough on most days for at least three months in the year for not less than two successive years. Referred patients will remain in the care of their private physicians who will be supplied with complete reports of studies. For referral of patients and further information, please contact Dr. A. D. Renzetti, Jr.



Abstract of Minutes*
House of Delegates of
The Colorado Medical Society

97th Annual Session
September 20-23, 1967

The House of Delegates held three meetings at its 97th Annual Session at the Broadmoor Hotel in Colorado Springs. Speaker M. L. Gibson and Vice-Speaker John Wood alternated in presiding throughout.

FIRST MEETING
Wednesday, September 20, 1967

The House was called to order by Speaker Gibson at 10:00 a.m. Dr. Thomas Foley, member of the Committee on Medicine and Religion, delivered the Invocation:

Dear God, bless this meeting of the House of Delegates of the Colorado Medical Society. Please God bless these good men and good women. Bless them and help them to achieve their full potential for good. May each member of this great society continue to practice medicine with that combination of science, morality, and service, that is in your image.

President Myron C. Waddell led the House in the Pledge of Allegiance. Dr. Terry J. Gromer, Sergeant-at-Arms, reported 96 Delegates present, including substitute Alternates accredited by the Credentials Committee. (See detailed roll call at the end of these minutes.)

President Waddell presented Mrs. Walter Herold, President of the CMS Woman's Auxiliary. Mrs. Herold introduced Mrs. Karl Ritter, President of the Woman's Auxiliary to the AMA, who addressed the House. President Waddell then recognized the Presidents and Presidents-elect of the component societies.

Vice-Speaker Wood introduced Dr. Matthew Gibson, who delivered the opening address to the House and reminded the delegates that the actions taken at this meeting reflect on them and all of organized medicine. Dr. Gibson announced the appointment of Drs. John Chamberlain to the Reference Committee on Scientific Work, and Donald Cook to the Reference Committee on Professional Relations.

Speaker Gibson read the following letter from Dr. I. E. Hendryson, member of the AMA Board of Trustees.

September 15, 1967

To: THE ELECTED OFFICERS AND MEMBERS OF THE HOUSE OF DELEGATES OF THE COLORADO MEDICAL SOCIETY

Mr. Speaker and Members of the House of Delegates:

I regret not being able to attend this annual meeting of the Colorado Medical Society in person. The meeting of the AMA Board of Trustees in Chicago prevents my being here. This will be the first meeting of this House that I have not attended since 1948.

I am taking this method, however, of extending my personal greetings to you, for I am still a member of the Colorado Medical Society and the ties that have developed through the long years of work and association in the Society give me a deep sense of compulsion to explain my absence.

Beyond that, it is necessary that I express to this House my deep appreciation to its elected officers, its staff, the entire AMA delegation for all of their hard work and devoted effort in effecting my re-election to the Board of Trustees of the American Medical Association.

I have tried as best I can to thank all of them individually, but I should like to again acknowledge their efforts and report to you that their total effort was wonderful to behold and it indeed was very productive.

If I were to mention the nostalgia that is deep in me now, I would then proceed to a point of becoming maudlin.

Forgive my absence, please, my heart (scarred though it may be) is with you. With best personal wishes, as always,

Sincerely,
IRVIN E. HENDRYSON, M.D.

Minutes of the Colorado Winter Clinics were approved as published in the May, 1967 issue of the Rocky Mountain Medical Journal.

Reports of Officers, Board, Councils and Committees were received as published in the official Handbook and were referred to the indicated Reference Committee. Dr. Gibson announced the following changes in Reference Committee assignments: Report C of the Board of Trustees and Report A of the Committee on Socio-Economics were referred to the Reference Committee on Insurance and Prepayment Plans. Report G of the Board of Trustees was referred to the Reference Committee on Professional Relations.

Dr. Roth, Chairman of the Judicial Council, submitted a supplemental report recommending that Dr. I. E. Hendryson be granted Honorary Membership in the Society and this recommendation was unanimously approved by the House.

President Waddell, on behalf of the Board of Trustees, submitted two nominations for Certificates of Service, both of which were confirmed. They were:

Franklin G. Ebaugh, M.D., Distinguished Teacher and Innovator

Irvin E. Hendryson, M.D., Tireless, Dedicated Medical Leader

Resolutions 1 through 5 were introduced and referred to appropriate Reference Committees.

Dr. Hermann B. Stein, Historian, made the following Necrology Report:

Fellow Physicians and Friends:

As another year is ending for the Colorado Medical Society, we remember those who have departed this life, and may I quote from a beautiful prayer which is spoken in unison each Sabbath eve in every synagogue and temple:

"All who mourn the loss of loved ones, and, at this hour, remember the goodness, the hope and the sweet companionship that have passed away with them, give ear to the word of comfort spoken in the name of God. Only the body has died and has been laid in the dust. The spirit lives and will live forever in the shelter of God's love and mercy. But in this life, also, the loved ones continue in the remembrance of those to whom they were precious. Every act of goodness they performed, every true and beautiful word they spoke is treasured up and becomes an incentive to conduct, by which the living honor the dead."

Sadly we mention the names of our departed physician brothers—

Vetalis V. Anderson, April 26, 1967
Delford H. Boal, October, 1966
Harry C. Bryan, March 18, 1967
O. J. Butterfield, November 6, 1966
Augustine S. Cecchini, August 6, 1967
William W. Chambers, April 15, 1967
Robert L. Downing, December, 1966
Charles S. Elder, December 19, 1966
Edgar A. Elliff, October 31, 1966
John R. Evans, August 22, 1967
L. McCarty Fairchild, November, 1966
Glenn O. Giffin, November 20, 1966
D. Dean Gillespie, August 28, 1967
Guy H. Hopkins, November, 1966
H. Paul Johnson, May 5, 1967
W. Wiley Jones, January 13, 1967
George P. Lingenfelter, August 11, 1967
Byron H. Lord, February 26, 1967
Joseph J. Mahoney, November, 1966
Robert L. Marsh, November 9, 1966
Fordyce H. McCabe, May 6, 1967
Aidan M. Mullett, March 20, 1967
Lorenzo D. Quick, November, 1966
Joseph F. Prinzing, June 15, 1967
James L. Ryan, June 25, 1967
Ralph E. Switzer, February, 1967
Atha Thomas, January 12, 1967
Elmer L. Timmons, February 20, 1967
Donald A. Turner, November, 1966
Earl Underwood, October, 1966
Harold Von Detten, December, 1966
James H. White, October 21, 1966

The following individuals addressed the House and appropriate reference of the address was made in each instance:

President Myron C. Waddell, Presidential Address, referred to the Reference Committee on Board of Trustees and Executive Office;

Roy L. Cleere, M.D., Director of the Colorado State Department of Public Health; Report labeled A was referred to the Reference Committee on Legislation and Public Relations, and Report B to the Reference Committee on Professional Relations;

Cyrus W. Anderson, M.D., President of the Meridian Fund, referred to the Reference Committee on Board of Trustees and Executive Office.

Marcus B. Bond, M.D., reported on the Amigos de Las Americas Project, which was referred to the Reference Committee on Board of Trustees and Executive Office.

George Buck, M.D., made a report regarding the Empire Casualty Company and this report was referred to the Reference Committee on Insurance and Prepayment Plans.

Dr. John J. Conger, Vice President for medical affairs and Dean of the University of Colorado School of Medicine, made a special report which was referred to the Reference Committee on Scientific Work with the exception of that portion of the report dealing with paramedical services which was referred to the Reference Committee on Professional Relations.

Paul Muckle, technical exhibitor, spoke about the exhibitors' problems and aims.

Actions of the House on reports and resolutions will be detailed in the minutes of the second meeting.

Speaker Gibson asked if there was unfinished business and the Secretary read individually all the Constitutional changes which had been held over since the 1966 Annual Session. All were voted upon and passed individually as published in the Handbook.

SECOND MEETING
Friday, September 22, 1967

The House was called to order at 2:00 p.m. by Speaker Gibson. Eighty-two Delegates were present, including substitute Alternates accredited by the Credentials Committee. (See detailed roll call at the end of these minutes.) Reading of the minutes of the first meeting was dispensed with on motion.

There were no additional reports from Officers, Board and Councils. Speaker Gibson called upon President Waddell to present the 50-year pins to Drs. Walter A. Ohmart, Elwood B. Lynch and Calvin N. Caldwell. Dr. Constantine Kemper had received his pin at the banquet the previous evening. Immediately following the presentation of the 50-year pins, Dr. Waddell again called upon Dr. Calvin N. Caldwell and presented him with the Annual Robins Award for outstanding community service.

President Waddell presented the Certificate of Service, which was unanimously supported by the House at its first meeting, to Dr. Franklin Ebaugh.

Definitive Actions

Reports of Reference Committees were presented, with actions by the House as follows:

Reference Committee on Board of Trustees and Executive Office

Approved Board of Trustees Report A "Progress Report" and Report B "Budget for the 1967-68 Fiscal Year" as carried in the Handbook.

Approved Report F of the Meridian Fund as printed and approved the Supplemental Report of the Meridian Fund with the deletion of that

portion of paragraph 2 on page 2 beginning with the words "as an investment vehicle. . . ."

Approved Board of Trustees Report J "Centennial Committee" and Report K "Annual Audit" as published.

Approved Board of Trustees Supplemental Report of the Society's Project Viet Nam Committee but felt that it would be impractical at this time for the Medical Society to adopt a hospital or facility in Viet Nam, nor should the Society offer to supply a certain number of physicians for Project Viet Nam. This choice should be the private, personal option of the individual practicing physician.

Approved Board of Trustees Report M and made the following comments about the Amigos program.

"Your Committee heartily commends Dr. Marcus Bond for his great effort and hard work in organizing, training, and supervising the 20 teenagers who went to Central America on the Amigos de Las Americas Project this past July. The Committee also warmly thanks Miss Kathy Boyd for her talk at the first meeting of your House.

"Your Committee found that everyone who spoke at our hearing greatly favored the general concept and worthiness of this project. Everyone seemed to agree that the goodwill and extremely favorable publicity has been a boon to the State Society, and their image.

"Your Reference Committee is aware that certain members of our Society are opposed to spending of Society money for this project. At the same time, we know that they are in no way opposed to the project in principle.

"Your Committee was increasingly impressed by the advantages of this program and feels that it would be most improvident to lose the goodwill fostered by this program. Your Committee has full confidence in the discretion of the Board of Trustees to give limited financial support to this project in cooperation with the private and business supporters."

A motion was made and defeated to change the last line of the last paragraph to read "give limited medical support" rather than "limited financial support."

Approved Reports A and B of the Foundation Advocate as published.

Approved Report A of the Executive Secretary and the comments made by Dr. Waddell in his outgoing address and reiterated the next to the last paragraph of Dr. Waddell's talk dealing with "the formation of a foundation to build or obtain a facility which would house all organizations interested in health care."

Approved the remarks made by Mr. Paul Muckle concerning the problems confronting the technical exhibitors.

Approved Resolution No. 5, "Colorado Blue Shield," which resolved, "That the President of the Colorado Medical Society be directed to appoint an ad hoc committee to conduct, with the information now available, an investigation of Colorado Blue Shield and especially of the relationship of the Colorado Medical Society to the Colorado Blue Shield and to its administration, this Committee to report its findings and recommendations for action at the next interim session of the House of Delegates."

Reference Committee on Legislation and Public Relations

Approved Board of Trustees Report D and the Supplemental Report D of the Board of Trustees dealing with the Amigos de las Americas Program. The Reference Committee recommended continuing the sponsorship of this program.

Approved Board of Trustees Report E "Resolution No. 4 United Mine Workers (MW67)" and agreed that this Society cannot legally urge its members as individuals or as a group to cease participation in such a program; however, if a member is dissatisfied with such a system he can withdraw from any further participation. Education and enlightenment of the physician and the public at the local level appear to be our best weapons against such systems.

Approved Board of Trustees Report I "Violations of PL 89-97," as published.

Approved the Progress Report A of the Council on Legislation and noted in the discussion of HB-1447 that in the next session of the Legislature, a bill may be introduced to authorize physicians and perhaps other professions (except lawyers who, by Supreme Court rule, are so already authorized) to set up a corporate structure for the practice of their professions. Recommended that the Council on Legislation should carefully study this matter, considering any benefits as well as disadvantages to the medical profession. In the event that legislation is introduced on this subject, they, in consultation with the Board of Trustees and legal counsel, should take such steps as they may deem proper to insure the adoption of legislation acceptable to the medical profession, and to prevent any statutory authorization which might lead to lay control over the practice of medicine.

The Committee noted with interest the discussion of the Pharmacy Bill that was introduced and which did not pass at this last session. The Committee felt that the Colorado Hospital Association should be included in the deliberations of the Medical Society and Pharmaceutical Association in the introduction of a pharmaceutical bill which would be satisfactory.

Approved Report A of the Council on Medical Service, "State Welfare Department Affairs Committee" and stated that every effort should be made by our Society through its State Welfare Department Affairs Committee and Council on Legislation to be a guiding influence in the medical aspects of the Title XIX program.

Approved Part 1 of Report C of the Council on Medical Service "Medical Advisory Committee to the Health Facilities Planning Council." The

Committee felt that continued physician involvement in such area-wide planning is most necessary and urges further close scrutiny and cooperation by the CMS Advisory Committee to this important Council.

Approved Section 2 of the above report dealing with the Crippled Children's Program and reiterated the previous position of our House of Delegates made at both the 1966 Annual Session and the 1967 Winter Clinics urging the adoption by the Crippled Children's Division of the State Health Department of the principle of "Free Choice of Licensed Physician in the Care of Government-Sponsored Programs, not excluding Crippled Children." The Committee felt this principle of free choice is most important and that continued efforts should be made to involve the local physician in this program should the patient and doctor so desire. This is necessary not only for the initiation of proper therapy but for continuing the necessary follow-up treatment of these difficult problems.

Disapproved Resolution No. 3 "State Medical Examiners System" since legislation would be necessary to carry out such a resolution, but referred it to the Council on Legislation for their study and report to the House of Delegates at the Interim Session of the House.

Received with interest a section of Dr. Roy Cleere's remarks dealing with Public Law 89-749 and again stated that physician and society participation in this state-wide planning of health facilities is of the greatest importance.

Reference Committee on Insurance and Prepayment Plans

Approved Board of Trustees Report C "Physicians Fee Index Study" and charged the Board of Trustees with the responsibility as to when to repeat such a survey in order to keep the information current and flexible. Also suggested that some information might be presented in the Rocky Mountain Medical Journal and Colorado Medicine.

Approved Report B of the Council on Interprofessional Relations "Professional Insurance and Retirement." The House amended the Reference Committee report by deleting the suggestion of referring future reports to another Reference Committee.

Approved Report A of the Committee on Socio-Economics as published.

Approved the special report of Dr. Buck "Changing Trends in the Field of Malpractice Insurance." It was the opinion of the Committee that the Board of Trustees through its various channels such as the Legislative Council or Medico-legal Committee might start investigating and considering the possibility of putting into our legislature a statute similar to the one mentioned in Alaska which negates the doctrine of res ipsa loquitor.

Approved Report B of the Committee on Socio-Economics, Part One, dealing with the Blue Shield Advisory Committee as published.

Approved Part Two of Report B of the Committee on Socio-Economics as published.

Reference Committee on Professional Relations

Approved Board of Trustees Report H "Health Careers Council" and urged exploration and implementation of avenues to raise needed monies from both individual sources as well as medical society coffers.

Considered Board of Trustees Report O "Ancillary Pediatric Personnel" and concluded that our Society should remain neutral, open-eyed and interested at this time. Recommended that explorations of the feasibility and ramifications of the program be supported by the Colorado Medical Society provided that the Medical Society representatives and representatives of the Medical School work together from this time forth on the problems. It should be emphasized that this support does not necessarily indicate either approval or disapproval of the concept as a whole.

Considered Report G of the Board of Trustees "Utilization Review Committees in ECF's" and agreed with statements 1, 2, 3, 4, 6 and 7 of the Report. The Committee recommended deletion of paragraph five as well as a concerted effort to remove this subject from the law. Reference Committee commented that utilization review should be confined only to evaluating the medical need for admission or retention in the facility. The timing of visits is primarily a matter between physician and patient and can vary widely. Efforts to establish rigid times for visits should be resisted.

The committee made the following recommendations:

A) Consideration of medical need must be separated from consideration of financial need, insurance benefits, and social pressures. When these problems arise, referral to the appropriate social and welfare agencies should be made.

B) Nursing Home Administrators should be periodically reminded and if necessary reported to the fiscal agent if they intervene in the physician determination of need. Only the physician can evaluate these needs; it is not a right for all patients to enter an extended care facility.

C) Payment for services on Utilization Review Committees in ECF's should be determined by local action, and is properly not a matter for State Society direction.

Approved Report A of the Judicial Council "Progress Report" with the suggestion that the Judicial Council consider the additional recommendation of the Reference Committee:

"In the event the patient insists upon use of the card, and if he would normally pay in installments, the physician should offer to submit the bill, to the third party, in monthly installments."

Approved Report A of the Grievance Committee "Progress Report" as published.

Approved Report A of the AMA Delegation and the report carried in the Rocky Mountain Medical Journal with the recommendation that the

AMA Delegation be instructed to seek amendment of the policy statement to require that therapeutic abortions be performed in a hospital that is licensed and certified by the state, the Joint Commission requirement being deleted. There was a motion made to delete this recommendation but it was defeated.

Approved Reports B and C of the AMA Delegation as published.

Approved Report A of the Council on Interprofessional Relations "Progress Report" as published. The Reference Committee understood that the State Department of Public Health is presently engaged in a study to revise Nursing Home Standards. The Committee recommended that the Medical Society request the State Department of Public Health to supply the Medical Facilities Committee with a copy of the draft prior to Health Department adoption for Medical Society study and recommendations.

Disapproved Report D of the Council on Medical Service "Rules and Regulations for Medical Practice in Small Hospitals," and made the following comments:

"We are all interested in good community health care. We, as a profession, also realize that the type of care rendered in the small outlying communities is of necessity different than metropolitan care. Most physicians like to keep abreast of technological and scientific advances and in general like to shoot the breeze and discuss the events of the day. As the State Society's legislative body we really have little idea of the problems and desires of the physician who practices in the areas removed from metropolitan centers. We all are impressed by the good and goodwill that projects like 'Amigos de las Americas' and 'Project Viet Nam' have enjoyed. Why not 'Project Rural Colorado'? We would suggest that a committee of our rural physicians be activated to discuss and request needs that our State Society might provide. We would also suggest that Dr. Zeigel visit these areas first when he makes his rounds of the component societies and that he ask opinions of such a program, as well as attempting to find out just what their local needs might be.

"If, for example, a periodic visit from a consultant would be appreciated, then let our Society arrange for such help. Such a program might fit in neatly with the Heart, Cancer, Stroke Program and should certainly be discussed with Dr. Hildebrand. It might be that over the long haul an active rural program of the State Society could stimulate some young G.P.'s to go into practice in areas that otherwise might not be considered due to remoteness from academic centers and stimulation."

Approved Report A of the Interorganizational Advisory Council as published.

Approved Report B of Dr. Roy Cleere "Title XVIII" as presented to the House.

Considered Dr. Conger's remarks dealing with paramedical matters and recommended that any such program and study should evolve from joint Medical Society-Medical School planning.

Approved Report A of the Council on Scientific Education "Progress Report" as published.

Approved Report E of the Council on Scientific Education "Cancer Committee" and recommended continuing the Conference in 1969.

Approved Report B of the Council on Scientific Education "Report of the 1967 Colorado Winter Clinics" and suggested that consideration be given to one speaker, on Friday evening, on a timely topic of general interest.

Approved Report C of the Council on Scientific Education "Committee on Medical Quackery" as published.

Approved the remarks of Dr. Conger as given.

Reference Committee on Public Health

Approved Report B of the Council on Medical Service "Committees on Blood, Disaster Medical Care and Medical Aspects of Sports" as printed.

Approved Report A of the Council on Public Health "Progress Report" with the following changes:

Final Sentence of Paragraph 1, Page 4. Delete "age of twelve months" and substitute "between the ages of nine and twelve months" so the sentence would read: "The Committee supports the program of vaccination for every child between the ages of nine and twelve months."

The last paragraph on Page 4 be changed to read as follows: "The Council endorses the Committee's recommendation to urge inoculation for measles between nine and twelve months for every child, and inoculation against diphtheria, pertussin and tetanus, and tuberculin skin testing by the age of twelve months as is presently done."

The last sentence in the final paragraph on Page 6 be changed to read: "At the present time a Legislative Commission is studying the problem and it is hoped that, without the pressure of time, a reasonable and well-thought-out piece of legislation will be developed." And add the following sentence: "The Medical Society offers its assistance in drafting legislation which it can support."

Approved Report D of the Council on Scientific Education "Papanicalaou Smear Program" as printed.

Disapproved Resolution No. 1 "Mandatory Immunization of School Children" introduced by the La Plata County Medical Society since immunization should be given at an optimum age and since this resolution would not affect the pre-school child where it is most needed, and, also, since the requirement of compulsory immunization generally opposes the tenets of the A.M.A., implementation of this resolution would not be in the best interests of the Society.

Approved Resolution No. 2 "Interagency Council on Smoking and Health" introduced by Dr. Roger S. Mitchell.

Approved Resolution No. 4 "Rural Traffic Accidents" as submitted by the Council on Public Health.

Reference Committee on Constitution, By-Laws and Credentials

Approved Report A of the Organization Study Committee "Amendments to the Constitution and By-Laws" as published.

Agreed with the suggestion in Report B of the Organizational Study Committee that Component Society Presidents sit as ex-officio members of the House of Delegates without vote. This would require a change in Section 2 of Article Five of the Constitution and is considered unfinished business.

Approved the suggestion that Component Society officers be installed at about the same time of the year and urged that Delegates be instructed to convey this message to their respective societies.

Approved recommendation that the Society's fiscal year be changed from August 1 through July 31.

THIRD MEETING

Saturday, September 23, 1967

The House convened at 8:20 a.m., September 23, 1967 and 40 Delegates, including substitute alternates were seated. On motion, the House dispensed with reading of minutes of the second meeting.

President Waddell awarded the Certificate of Service to Dr. I. E. Hendryson, who then addressed the House.

Election of Officers

There were no new nominations from the floor for any of the offices to be filled and the following names proposed by the Nominating Committee were elected by acclamation:

President-elect: William M. Covode, M.D., Denver

Vice Preisdent: Carl H. McLauthlin, M.D., Denver

Trustee (three years): Kenneth A. Platt, M.D., Westminster

Trustee (three years): Joel R. Husted, M.D., Boulder

Trustee (two years): Geno Saccomanno, M.D., Grand Junction

Trustee (one year): Richard L. Davis, M.D., La Junta

Judicial Council (three years): District No. 3, Kenneth E. Gloss, M.D., Colorado Springs; District No. 6, Heman R. Bull, M.D., Grand Junction; District No. 7, Stanley Haukeness, M.D., Durango.

Grievance Committeemen (2 years): Richard L. Codd, M.D., Fort Collins; John A. McDonough, M.D., Ordway; James P. Hensen, M.D., Pueblo; Carl J. Manganaro, M.D., Sterling; James A. Henderson, M.D., Englewood; Edwin D. Kadlub, M.D., Windsor.

AMA Delegates for two-year terms, January 1, 1968 to December 31, 1969: Harlan McClure, M.D., Lamar; and Gatewood C. Milligan, M.D., Englewood.

Alternate Delegates for same period: Vernon L. Bolton, M.D., Colorado Springs; and Ray G. Witham, M.D., Craig.

Speaker of the House of Delegates: John M. Wood, M.D., Englewood

Vice Speaker of the House of Delegates: Robert G. Bosworth, Jr., M.D., Denver

Foundation Advocate: W. Bernard Yegge, M.D., Denver

Historian: Hermann B. Stein, M.D., Denver

The nominations by President-elect Zeigel for membership on the Administrative Councils were reread. There were no nominations from the floor and the nominees proposed by Dr. Ziegel were then elected by acclamation.

The House was adjourned sine die and officers for the year 1968-69 were installed.

HOUSE OF DELEGATES ROLL CALL

ANNUAL SESSION, SEPTEMBER 20-23, 1967

Component Society	Delegates	Alternates
Adams County-Aurora	O'Dell, Robert (1) (2) (3)	Joseph, Norman
	Palmieri, Anthony (1) (2)	Censonsky, H. Sol
Arapahoe	Bortz, Alan	Hugbes, Clarence (1) (2)
	Brittain, Robert (1) (2)	Shugart, Ralph
	Fraser, Charles	Carver, Robert (1) (2)
	Grund, Walter (1) (2) (3)	Brinton, William T.
	Jobe, William (1) (2) (3)	Melzer, Robert
Boulder	Kahn, Kennetb (1) (2)	Amoroso, Christian
	Kerkhoff, Stanley (1)	Hardenberg, Firmon
	McCurdy, Robert S.	Gillette, Warren
	McFarland, Robert	Avery, John
		Amoroso, Christian* (1) (2)
	Takahashi, William (1)	Strenge, Henry (2)
	Yost, Byron (1) (2)	Wherry, Harry
Chaffee	Leonardi, Leo	McNamara, B. E.
Clear Creek Valley	Ansley, Robert (1) (2)	Markham, Allen
	Dean, Carlton (1) (2)	Bridgeman, John (3)
	Doyle, John	Carpenter, David
		Herrmann, Richard* (1) (2)
	Driver, Thomas	Walker, H. B. (1) (2)
	Durham, Morgan (1) (2) (3)	Eaton, Wyley
	Maruyama, Herbert	Traylor, Frank
		Chamberlin, John* (1) (2)
	Sadler, Dean (1) (2)	Haynes, Robert
	Sontag, Stanley (1) (2)	Chamberlin, John
	Wotkyns, Roger (1) (2)	Gjellum, George
Delta	Bennett, Robert (2) (3)	Hick, L. L.
Denver	Amesse, John	Kempe, C. Henry (1) (2)
	Atkins, Dale (1)	Tucker, Warren
	Badger, E. Bruce (1) (2)	Williams, Ben
	Blandford, Sidney (1) (2)	Tyler, Monroe
	Bosworth, Robert (1) (2)	Appelbaum, Jerry
	Bramley, Howard (1) (2) (3)	Reimers, Wilbur
	Buchtel, Henry (1)	Fisher, H. Calvin
	Butterfield, Josepb (1) (3)	Sawyer, Kenneth, Jr.
	Chisholm, R. Neil	Freedman, Marshall (2)
	Clarke, J. Philip (1)	Edwards, John
	Condon, William (1)	Roessing, Lawrence
	Coppinger, William (1)	Pear, Bertram
	Covode, William (1) (2) (3)	Lasater, Gene
	Earley, Thomas (1) (2)	Blanchet, David
	Eisele, C. Wesley	Johnson, Melvin
		Talbott, Richard* (1) (2) (3)
	Elliott, Robert (1) (2)	Coleman, Thomas
	Frangos, Pete (2)	Hoch, Peter
	Freed, Charles G.	Sawyer, Robert (1) (2)
	Friedland, Joseph (1) (2) (3)	Zarlengo, Roland
	Gromer, Terry (1) (2) (3)	Brock, L. Loring
	Hamilton, Paul (1)	Alexander, C. Houston
	Ishell, N. Paul (1)	Ashe, S. M. Prather

Component Society	Delegates	Alternates
Denver (cont.)	Kovarik, Joseph (1)(2)(3)	Baker, William
	Lewis, Henry (1)(2)	Anderson, Martin
	Liggett, Robert (1)(2)(3)	Githens, John
	Lipscomb, William	Bronson, Howard
	Livingston, Wallace (1)(2)(3)	Rademacher, Raymond
	Longwell, Freeman (1)(2)	Hermann, Gilbert
	Mahony, Thomas	Cotton, Ralph
	McCurdy, Robert E. (1)(2)(3)	Benedict, Daniel
	McGlone, Frank	Gipson, Bernard
	Meiklejohn, Gordon (1)(2)	Dafoe, Charles
	Mitchell, Roger (1)(2)(3)	Blackwood, Charles
	Nelson, John (1)	Bouslog, John
	Perkins, James (1)(2)	Massa, Emil
	Philpott, James, Jr.	List, James
	Philpott, Osgoode, Jr. (1)	Talbott, Richard
	Rothenberg, Herbert	Kukral, Albert
	Stanfield, Clyde	Curry, Marcia (1)(2)
	Strain, James (1)(2)	Campbell, Horace
	Toll, Henry (1)(2)	Wherry, Franklin
	Tyner, George (1)(2)(3)	Harvey, Richard
	Virtue, Robert (1)(2)	Becker, Harold
	Wilson, William (1)(3)	Kaplan, Max
Eastern	Ross, C. L. (1)	Straub, John
El Paso	Bolton, Vernon (1)(2)(3)	Lovell, Kenneth
	Crawford, Lewis (1)(2)(3)	Larimer, Craig
	Donald, James (1)(2)(3)	O'Donnell, James
	Hays, John (1)(2)(3)	Presti, Matthew
	King, Otis (1)(2)(3)	Worlton, James
	Liddle, E. B. (1)(3)	Roesler, Paul
	Paap, Jack (1)(2)	Ryder, William
	Pierce, Alson	Edwards, James (1)(2)(3)
	Wiggins, Milton (1)(2)	Stafford, Robert
Fremont	Miller, Howard	Christie, George (1)
Garfield	Hendrick, Harry (1)(2)	Mueller, Edward
Huerfano	Merritt, William (1)	Lamme, James, Jr.
Lake	Stanley, George (2)	Surges, Lloyd
La Plata	Murray, Menard (1)(2)	Swanson, Robert
Larimer	Anderson, William (1)(2)(3)	
	Codd, Richard (1)	Murray, Douglas
	Hansen, Richard	Unfug, Harry
		Wells, Donald* (2)
	Robertson, Ian (2)	
Las Animas	Donnelly, James	Vialpando, A. B. (1)
Mesa	Huskey, Harlan (1)(2)(3)	Wilson, Charles
	Linnemeyer, R. E. (1)(2)(3)	Parker, J. James
	Troy, Richard (1)(2)(3)	Rigg, James P.
Montelores	Gardner, Vincent (1)(2)	Merritt, Edward
Montrose	Greenwood, Richard	Balderston, George
Morgan	Mellinger, William (1)(2)	Woodward, Paul
Northeast Colorado	Brehm, Gill (1)(2)(3)	Mackey, Jack
	Manganaro, Carl (1)(2)(3)	Carter, B. J.
Northwestern	Price, Vernon (1)(2)(3)	Crawford, M. L.
Otero	Sisson, William (1)(2)(3)	Sampson, Lloyd
Prowers	Likes, Edwin (1)(2)	Blease, E. B.
Pueblo	Beckwith, Richard (1)	Braukman
	Childers, Stanley (1)(2)(3)	Tice, Frederick
	Farabaugh, Leonard	Hurley, Grant
		Staats, R. E.* (1)(2)
	McKinnon, George (1)(2)	Staats, R. E.
	Swartz, Carl (1)(2)(3)	Capek, Richard
	Vickery, Don (1)	Hopkins, William
San Luis Valley	Cassidy, Charles	Duncan, Albert
	Rechnitz, Fred (1)(2)(3)	Bradshaw, Robert
Washington-Yuma	Waski, A. T.	Good, Gilbert
Weld	Allely, Donald (2)(3)	Cook, Donald (1)
	Kadlub, Edwin (1)(2)	Bates, David
	Shore, Roy (1)(2)(3)	Wolach, Bernerd
	Weaver, Phillip (1)(2)(3)	Miller, Burdette

*Indicates appointed substitute Alternate in absence of both elected Delegate and Alternate.

City Signs First Contract for Use of Exhibit Hall

Denver Mayor Tom Currigan, at right, signs the first formal contract for use of Denver's new 13.5 million dollar exhibit hall. The contract was signed with the American Medical Association for their convention Nov. 30-Dec. 3, 1969. Joining Mayor Currigan were Dr. Henry Zeigel, at left, president of the Colorado Medical Society, and Ed Hirschfeld, president of the Denver Convention and Visitors Bureau. The signing took place at the construction site of the new building scheduled for completion January 1, 1969. The steel framework that will support the roof is seen in the background.

Physicians in the News

At the recent meeting of the Montana Division of the American Cancer Society, Ernest J. Eichwald, M.D., Great Falls, was re-elected president. Vern G. Tolstedt, M.D., Helena, and Fred M. Long, M.D., Great Falls, were re-elected members of the Board of Directors of the society.

W. F. Antonioli, M.D., Butte, has been elected president of the Montana Physicians' Service to succeed George J. Moffitt, M.D., Livingston. Berl B. Ward, M.D., Billings, is a newly elected member of the Board of Trustees.

Herbert T. Caraway, M.D., Billings, chairman of the State Board of Institutions, was the guest speaker at a recent public meeting of the Billings League of Women Voters.

MEDICAL SCHOOL NOTES

University of Colorado Medical Center

Governor John A. Love, in his capacity as a director of the Children's Metabolic Research Foundation, on November 2 presented the foundation's check for $15,000 to the University of Colorado to assist in construction of the John F. Kennedy Child Development Center.

The foundation was organized several years ago to encourage research into congenital metabolic disorders which affect children. Originally the Gaucher Research Foundation—Gaucher's disease is one of the "inborn errors of metabolism" with which the group is concerned—the organization changed its name early this year to indicate its interest in other similar conditions.

The gift presented by Governor Love represents the second $15,000 installment on the foundation's pledge of $80,000 to complete financing on construction of the B. F. Stolinsky Research Laboratories. The five-story, $912,000 building is being erected with financing from federal and private sources.

The Kennedy Center program is supervised by an executive committee of which Dr. Donough O'Brien, CU professor of pediatrics and a specialist in metabolic conditions, is chairman. Dr. Joseph P. Rossi, assistant professor of pediatrics, will be operating director of the center with Dr. Richard L. Crager, assistant professor of clinical psychology, as associate director.

Investigations in the Stolinsky Laboratories will cover a wide range of basic scientific disciplines: neurophysiology, neuropharmacology, developmental pediatrics, population genetics, biochemical genetics, nutrition, lipid chemistry, developmental biochemistry, neurochemistry, behavioral science, and cytogenetics.

* * * *

Appointment of Dr. Karl M. Luke, Jr., of Fort Morgan, as consultant on dental hygiene education to the University of Colorado School of Dentistry has been announced by Dr. Leslie R. Burrows, dean of the school.

Dr. Luke will maintain his private practice in Fort Morgan and provide consultation service on a part-time basis to the new dental school being established at the University of Colorado Medical Center in Denver. He will aid in planning and developing curriculum and programs for dental hygiene students to be enrolled in the new school. It is planned that the school will admit approximately 15 dental hygiene students beginning in 1969 to inaugurate the program. When the dental school opens formally in 1972, enrollment of an annual class of 30 dental hygiene students is planned.

Prominent in Colorado dental affairs, Dr. Luke received his D.D.S. degree in 1948 from the University of Nebraska School of Dentistry. He was a high school teacher of science and mathematics in Strasburg, Colo., before entering the dental profession. He attended the University of Denver and subsequently received his B.A. degree from Colorado State College in Greeley and did graduate work at the University of Chicago.

Dr. Luke is a director of the Colorado State Dental Association, past president of the Morgan County Dental Society, and has held all of the elective offices in the Northeastern Colorado Dental Society.

In addition to his dental society memberships, Dr. Luke's professional affiliations include the Colorado Dental Service Corporation and the Society for Preservation of Oral Health.

* * * *

Final fall enrollment totals at the University of Colorado Medical Center show 1398 undergraduate students, trainees and advanced degree candidates registered for the current academic year in medical, nursing and paramedical courses. This compares with 1306 students and trainees on the medical campus at this time a year ago, an increase of 7 per cent.

Of the total student-trainee population, 911 are regularly enrolled University of Colorado students and the remaining 487 are M.D. and Ph.D. doctors undertaking advanced hospital or research laboratory training, and trainees in various paramedical fields, some enrolled in cooperative programs with Colorado State University, the University of Denver School of Social Work and the Smith College School of Social Work.

The Medical Center has on its rolls this fall 44 interns, 265 resident physicians and 81 postdoctoral fellows. Comparable totals for last autumn were 43, 232 and 54.

* * * *

Dr. Robert F. Grover, assistant professor of medicine in the University of Colorado School of Medicine, has been invited to participate in the eighth quadrennial Inter-American Conference on Cardiology in Lima, Peru, next April 23-27.

The conference will consist of scientific papers and a series of 12 round-table discussions by leading international authorities in a variety of cardiovascular-pulmonary fields. Dr. Grover will be chairman of a panel which will discuss "The Heart and Circulation at High Altitude."

Every four years the conference meets in a Western Hemisphere nation to review developments and prospects in heart disease. Host at the Lima meeting will be the Peruvian Society of Cardiology.

* * * *

A University of Colorado biochemist is studying viruses and the effects they have on the cells in which they live.

Dr. Jacques J. Pene of the CU Institute for Developmental Biology is doing the research under

a one-year $68,657 grant from the National Institute of Allergy and Infectious Diseases.

Some viruses have serious effects on humans and knowing more about the functioning of viruses is important to medical research. Pene said studying a simple virus is similar to studying lower animals to learn about humans.

Pene wants to find out more about how a virus stops certain functions in the cells it attacks. A virus is inert unless it has the help of living cells. A virus either kills the cell it lives in by taking over the cell's machinery to carry out its own reproduction, or it establishes a stable relation with the cell and acts as part of the cell.

The University also has received a $14,500 grant from the National Science Foundation for the purchase of some of the equipment Pene will use to carry out his virus research project. The equipment includes a liquid scintillation counter that measures radioactivity and a preparative ultracentrifuge that separates molecules so their physical propertes can be studied.

* * * *

Appointment of Dr. Michael A. Solomon as assistant professor and head of the Division of Psychiatric Social Work in the Department of Psychiatry of the University of Colorado School of Medicine was recently announced by Dr. Herbert S. Gaskill, department chairman.

Born April 10, 1936, in Chicago, Dr. Solomon received his A.B. degree in 1958 from the University of Louisville in Kentucky and a master's degree in social work in 1960 from the Tulane University School of Social Work. He was awarded his Doctor of Social Work degree this summer from the Smith College School for Social Work in Northampton, Mass.

Dr. Solomon has had social casework experience with the Kentucky Department of Welfare, the Kentucky State Hospital in Danville, and the Jewish Family and Children's Service in St. Louis. During 1962-63 he was engaged in a post-master's degree training program in research and casework at the Washington University Medical Center in St. Louis.

As head of the CU Division of Psychiatric Social Work, Dr. Solomon succeeds Dr. David A. Kaplan, who resigned to become director of social service for the Department of Preventive Medicine in the Stanford University School of Medicine.

* * * *

Appointment of Dr. Steven G. Vandenberg, Netherlands-born lawyer and psychologist, to the faculty of the University of Colorado School of Medicine has been announced by Dr. John J. Conger, vice president for medical affairs and dean of the school.

Dr. Vandenberg will serve as professor of clinical psychology in the Department of Psychiatry. He also holds an appointment as professor of psychology on the Boulder campus of the University and will divide his time between the Medical Center in Denver and the Boulder campus.

* * * *

Appointment of Dr. Theodore T. Puck, University of Colorado biophysicist, to the advisory council of the National Institute of Arthritis and Metabolic Diseases has been announced by Dr. William H. Stewart, surgeon general of the U. S. Public Health Service.

Dr. Puck is American Cancer Society Research Professor of Biophysics in the University of Colorado School of Medicine and director of the Eleanor Roosevelt Institute for Cancer Research at the CU Medical Center in Denver.

As a member of the council, Dr. Puck will advise and make recommendations to the surgeon general and the director of NIAMD on the institute's grants and awards program. The NIAMD is one of the eight National Institutes of Health in Bethesda, Md., the primary biomedical research facilities of the U. S. Public Health Service.

The advisory council to NIAMD, established by Congress in 1950, is composed of 12 members who are prominent in science, education and public affairs. On the council's recommendation, after extensive initial scientific review, the U. S. surgeon general awards grants to universities, hospitals and other non-federal institutions for research into arthritis, metabolic diseases, renal diseases, disorders of the endocrine system, and related biomedical fields.

University of Utah Medical Center

A coordinated program for training residents in plastic and reconstructive surgery has been created in Salt Lake City. This broad spectrum of comprehensive education is under the direction of Drs. T. Ray Broadbent, Robert M. Woolf and Clifford C. Snyder. It is offered through the efforts of the L.D.S. Hospital, the Primary Children's Hospital, the University of Utah Medical Center and the Veterans Administration Hospital.

The training program will involve four plastic surgery residents who have served at least three years in general surgery training. The residents will train for two years in the new comprehensive program. These necessary requisites and an additional two years of active practice will make the trainee board eligible for the American Board of Plastic Surgery Examinations. Training in face, hand, tumor, head and neck and transplant plastic and reconstructive surgery will be offered.

Dr. Broadbent and Dr. Snyder are both examiners of the American Board of Plastic Surgery, members of the Residency Review Committee, inspectors of training programs, and are on the Editorial Board of the Journal of Plastic and Reconstructive Surgery.

THE BOOK CORNER

New books received are acknowledged in this section. Books here listed are available for lending from the Denver Medical Society Library.

Recent Acquisitions

Boyd's Pathology for the Surgeon: By William Anderson. Philadelphia, Saunders, 1967. 842 p. Price: $18.50.

The Brain: By Walter E. Dandy. Hagerstown, Md., 1966, Prior. 671 p. Price: Gift (Dr. Stuck.)

Case of the Day: By Benjamin Felson and Jerome F. Wiot. Springfield, Ill., 1967, Thomas. 83 p.

Classical Articles in Urology: By Mark A. Immergut. Springfield, Ill., 1967, Thomas. 329 p. Price: $20.75.

Collected Works on Rheumatic Fever: By Leo M. Taran. Flushing, N. Y., 1967, International Professional Publications. 276 p.

Comprehensive Textbook of Psychiatry: By Alfred M. Freedman and H. I. Kaplan. Baltimore, 1967, Williams and Wilkins. 1666 p. Price: $24.75.

Diabetes Mellitus: Diagnosis and Treatment: Edited by George J. Hamwi and T. S. Danowski. New York, 1967, American Diabetes Association. 250 p. Price: $2.50.

Diagnostic Procedures in Gastroenterology: By Charles H. Brown. St. Louis, 1967, Mosby. 438 p. Price: $19.75.

The Ecology and Etiology of Human Disease: By Kingsley M. Stenens. Springfield, Ill., 1967, Thomas. 201 p. Price: $7.50.

Growth and the Development of Children: By E. H. Watson and G. H. Lowrey. Chicago, 1967, Yearbook Medical Publications. 463 p. Price: $9.75.

Handbook of Congenital Malformations: By Alan Rubin. Philadelphia, 1967, Saunders. 398 p. Price: $4.00.

Pathology of the Human Placenta: By K. Benirschke and S. G. Driscoll. New York, 1967, Springer-Verlag. 512 p. Price: $33.00.

Pathology of the Kidney: By Robert H. Heptinstall. Boston, 1967, Little. 836 p. Price: $28.50.

Pediatric X-ray Diagnosis: By John Caffey. Chicago, 1967, Yearbook Medical Publications. 1192 p. Price: $39.50.

Praktische Anatomie: By T. von Lanz and W. Wachsmuth. Berlin, 1955, Springer-Verlag. 549 p. Price: Gift (Dr. Stuck).

Repair and Reconstruction in the Orbital Region: By John Clark Mustarde. Baltimore, 1967, Williams & Wilkins. 382 p. Price: $18.50.

Roentgenologic Diagnosis, a Complement in Radiology to the Beeson and McDermott Textbook of Medicine: By J. George Teplick, Marvin E. Haskin and Arnold P. Schimert. Philadelphia, 1967, Saunders. 2 volumes. Price: $38.00.

Synopsis of Gynecology: By Daniel Winston Beacham and Woodward Davis Beacham. St. Louis, 1967, Mosby. 384 p. Price: Gift.

Tenth Stapp Crash Conference: By Society of Automotive Engineers, Inc. 1967, University of Minnesota. 344 p. Price: $8.50.

Book Reviews

Gynecologic Pathology: By F. T. Kraus. St. Louis, 1967, C. V. Mosby. 504 p. Price: $18.50.

For either the pathologist or gynecologist, this text is a "must." It should be constantly near at hand, either in the physician's library, or in a readily accessible library.

This is a remarkably clear, well-organized presentation of the common problems in gynecology, which are approached from the basic viewpoint of pathological anatomy. An excellent example of the author's ability to deal with confusing subjects clearly is demonstrated in his discussion of dystrophies, keratoses and atrophies of the vulva; the logical, coherent presentation of "leukoplakia" and "kraurosis vulvae" is as helpful to the pathologist as it is to the clinical gynecologist.

Not only are the common problems developed fully, but the more esoteric diseases are mentioned, and the reader provided with a well-considered, sound, comprehensive bibliography to further study these diseases in depth.

The basis for the quality of this text is, of course, the author's own knowledge and writing skills. However, he was not only trained by Dr. Lauren V. Ackerman, but has solicited and used the advice of such authorities as Drs. Robert E. Scully and Herbert B. Taylor. If the validity of his presentation needs substantiation, these other experts certainly give it.

The book is generously illustrated with diagrams which are readily understood, gross pictures which are clear and representative, and photomicrographs which are relevant and of excellent quality.

In summary, this text will serve the gynecologist and pathologist consistently well as a steady source of information. It can also be recommended as a good starting point for the general physician needing a ready reference in this subject.

Giles D. Toll, M.D.

Medicine for Mountaineering: Edited by James A. Wilkerson, M.D., Mountaineers, Seattle, 1967. 350 p. Price: $7.50.

A handbook for the treatment of accidents and illnesses in remote areas, such as those encountered on mountaineering expeditions, has just been published by The Mountaineers, Seattle. The text goes beyond the principles of first aid, to cover cases where a victim must be evacuated to a doctor, often two or three days away, or where no doctor is available. Special illnesses caused by high altitude or a hostile environment are covered, as well as the necessary treatment of an accident victim under these conditions.

The book was compiled by physicians who are also mountaineers. Editor for the volume was James A. Wilkerson, M.D., assistant professor of pathology at the University of California School of Medicine, Los Angeles. Contributing editors include Earl D. Cammock, M.D., and Fred T. Darvill, M.D., Mt. Vernon, Wash.; Ben Eiseman, M.D., Lexington, Ky.; Thomas F. Hornbein, M.D., Seattle, climber of Everest's West Ridge; Charles S. Houston, M.D., Burlington, Vt., leader of K-2 expedition; and Herbert N. Hultgren, M.D., Palo Alto, and Thomas O. Nevison, M.D., Albuquerque, both experienced in expedition climbing.

Designed as a textbook for mountaineering medicine courses, the book also serves as a reference during actual treatment of medical disorders on a climb, so is small enough to fit into a standard climbing pack.

Seven years in preparation, the book profits from medical experiences with illnesses, accidents and high altitude effects on expeditions to the Himalayas and other remote areas, and emphasizes improvements made in medical treatment of traumatic wounds as a result of experiences in World War II and the Korean Conflict.

Included in the text are general principles of diagnosis, symptoms, and a section on preventive medicine. Treatment of traumatic injuries is covered, including soft tissue injuries, fractures and related injuries, burns, and injuries of the head, neck, chest and abdomen. Also covered are environmental injuries, including high-altitude effects, frostbite, exhaustion, exposure, solar radiation burns, heat injuries and animal bites. Nontraumatic diseases discussed include those of the respiratory system, heart, blood vessels, gastrointestinal areas, urinary tract, nervous system, eye, ears, nose and throat, as well as acute abdominal pain, infections and allergies. Appendices include dosages of drugs described in the text as well as precautions required with their use.

Available from The Mountaineers, P.O. Box 122, Seattle, Wash. 98111.

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MEETINGS

Surgery of the Hand

The University of Colorado School of Medicine announces a four-day postgraduate course on Surgery of the Hand, to be held February 20-23, 1968, in Denver. The course will cover specific subjects in the field of trauma of the hand with consideration given to immediate and delayed management of these injuries.

Registration and tuition fees are $80.00. For further information and a detailed program, write to: The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado 80220.

* * * *

Swedish Hospital Lectureship

Dr. Hans Popper, internationally known hepatologist from Mt. Sinai Hospital, New York City, will present the Second Annual Swedish Hospital Lectureship on December 15, 1967. The afternoon panel sessions will begin at 1:00 p.m. in Humphrey Auditorium at the University of Colorado Medical Center. The evening lecture on Drug-induced Hepatic Injury will follow dinner at the University Club in Denver.

Further information may be obtained from the Department of Pathology, Swedish Hospital, Denver.

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Wyoming State Medical Society Mid-Winter Seminar

Thursday-Saturday, March 14-16, 1968
Ramada Inn, Casper, Wyoming

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Cardiology

An intensive program on "Current Concepts in Cardiology" is being offered by the Institute for Cardiovascular Diseases at Good Samaritan Hospital, Phoenix, Arizona, and the American College of Cardiology. This meeting will be held at Del Webb's Towne House, Phoenix, Arizona, on January 10, 11 and 12, 1968. Program Director, Alberto Benchimol, M.D., with guest faculty, E. Grey Dimond, M.D., William Chardack, M.D., Darrell D. Fanestil, M.D., Mr. Dean Franklin, George C. Griffith, M.D., Paul G. Hugenholtz, M.D., Albert A. Kattus, Jr., M.D., C. Walton Lillehei, M.D., Oscar Magidson, M.D., Alfred Pick, M.D., Robert L. Van Citters, M.D. This is an official program of the American College of Cardiology. The Institute of Cardiovascular Diseases faculty consists of Alberto Benchimol, M.D., Lee Brown, M.D., Lee Ehrlich, M.D., and Marian Molthan, M.D.

For information about this program write to William D. Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Bethesda, Maryland 20014.

Third Annual Institute of Industrial Medicine
January 11 and 12, 1968
Aspen Meadows, Aspen, Colorado 81611
"Control of the Environment in Industry." Co-sponsor this year is the Colorado Medical Society's Committee on Occupational Health, Robert Bell, M.D., Chairman.
Topics for discussion will include: Engineering Aspects of Environmental Control; Toxicological Aspects of Environmental Control; Biomechanics and Human Engineering; Clinical Occupational Medicine.
The meeting is open to any physician and all members of the Rocky Mountain Chapter, American Industrial Hygiene Association, are invited to attend and to present papers. Also invited will be a few business executives, lawyers, insurance company representatives, and Industrial Commissioners. Total attendance is expected to be less than 100 which makes for a better communication. There will be a registration fee of $20 and wives are invited. This time is the best to visit Aspen—not crowded and the snow is great.
Anyone who wants to present a paper, please send abstract and title to: Roland J. Zarlengo, M.D., Program Chairman, Western Electric Company, 111 Havana Street, Aurora, Colorado 80010.
Make reservations directly with Aspen Meadows.

* * * *

General Practice Review
The University of Colorado School of Medicine announces a seven-day postgraduate course, The Fourteenth Annual General Practice Review, to be held January 14 through 20, 1968, in Denver. This course features one day devoted to each of six major fields of practice: Medicine, Pediatrics, Dermatology, Surgery, Obstetrics and Gynecology, and Trauma. Physicians who do not wish to attend the entire course may register for selected days. The registration fee is $10.00 and the tuition fee for the entire course is $75.00 or $15.00 per day.

A on-day symposium on Sunday, January 14, 1968, at the Cosmopolitan Hotel in Denver is entitled "Iatrogenic Illness: A Problem of Medical Progress," and is sponsored jointly by the University of Colorado School of Medicine and the Colorado Academy of General Practice. Through the generosity of Lederle Laboratories, there are no fees or charges for the symposium, the luncheon, or other activities of the day. Special entertainment is provided for the ladies. Admission to the symposium is by invitation only. Invitations and detailed programs for both the symposium and General Practice Review postgraduate course may be obtained by writing to: The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado 80220.

Utilization Review
"Quality, Utilization, and Fiscal Review—Whose Responsibility?" will highlight discussions at the Second National Conference on Utilization Review sponsored by the American Medical Association.

The one-day meeting, planned by the AMA Council on Medical Service and its Committee on Medical Facilities, will be held from 9 a.m. to 5 p.m., Saturday, Nov. 25, in the Shamrock Hilton Hotel, Houston, preceding AMA's Clinical Convention.

For pre-registration information contact: American Medical Association, Department of Hospitals and Medical Facilities, 535 North Dearborn, Chicago, Illinois 60610.

* * * *

American College of Surgeons Annual Meeting
The 1968 Scientific Meeting of the Utah Chapter of the American College of Surgeons will be held in Park City, Utah, January 12 and 13, 1968.

Dr. Talmage W. Nielsen, Salt Lake City surgeon, of the program committee, has announced an outstanding scientific agenda including: Dr. Tom Shires, Chief of Surgery, Parkland Hospital, Dallas, Texas, and Dr. Thomas Starzl, Chief of Surgery, Denver V.A. Hospital, as visiting speakers. Also making presentations will be Dr. George Cartwright, Professor of Medicine, University of Utah College of Medicine, and Dr. Willem Kolff, Professor of Surgery, University of Utah College of Medicine, Salt Lake City.

Reservations should be sent immediately to Dr. Lawrence E. Stevens, Department of Surgery, University of Utah College of Medicine, Salt Lake City, Utah.

* * * *

Colorado Diabetes Association
The fifth annual Postgraduate Diabetes Institute will be held in Aspen, Colorado, February 21 through February 25, 1968.

The increased popularity among doctors for this mid-winter conference has developed an active response from all parts of the country.

Guest speakers who are authorities on the subject of diabetes are being invited to attend and participate in the conference.

Sessions are held from 7:30-9:30 a.m. and from 3:45-6:15 p.m. The permits the use of the middle of the day for the finest skiing in the world if one is interested. Why not plan now to get away from your office for this Aspen Institute where you can combine the pleasure of an unusual vacation along with new insights into the latest research in diabetes.

Limited registration. Contact Walter A. Huttner, M.D., President, Colorado Diabetes Association, 1375 Delaware, Denver 80204.

"WHAT GOES ON" is your complete reference for scientific meetings in eleven western states. Check the monthly bulletins for meetings not listed in RMMJ or for additional details of the scientific programs. Advertising by Lederle Laboratories enables the Colorado Medical Society to furnish copies of "What goes on" to ALL Medical Doctors in the eleven participating western states.

OBITUARIES

Colorado

Dr. W. L. McBride of Flagler, Colorado, died October 4, 1967 in Flagler, lacking only two weeks of having attained the age of 82. He had been a patient in the Hugo Hospital several weeks prior to his demise.

Dr. McBride was born in Mankato, Kansas, on October 19, 1885, the son of Robert H. and Mary Young McBride. He attended college in Manhattan, Kansas, and graduated from the Kansas City College of Medicine and Surgery in 1917.

He arrived in Seibert, Colorado, in the spring of 1918, and continued to serve that area of eastern Colorado until his retirement in 1962.

Historically, the career of Dr. McBride is of paramount interest, for he was a true pioneer in the practice of medicine through war, depression, and dust bowl days. By 1925 he had established a small emergency hospital in Seibert. His plans for a new hospital were thwarted by the depression of the early 1930's. He purchased an hotel building in Flagler and remodeled it into a nine-bed hospital, opening it in 1937. This hospital at the time was considered to be the best equipped hospital between Colby, Kansas, and Denver. It continued to function until economic conditions forced its closing in 1963.

Dr. McBride's years in medical practice began when the country was emerging from the horse and buggy days and continued into the atomic and jet ages with the practice of medicine making revolutionary changes. He was one of those doctors who was able to tie the old in with the new, serving a rural area with a general practice, and employing the latest methods and procedures. His practice spanned three generations of families in the large area he served.

During earlier years of his practice, surgical cases were sent by train into Denver and occasionally arrived there too late for help. Seeing the need for advanced training, Dr. McBride did postgraduate work in Chicago those early years. Thus fortified in further training, he was the first to perform major operations in that part of the state, frequently on kitchen tables and later at his own small hospital in Seibert; and in Burlington to the east. He early recognized the use of antiseptic measures which later became standard procedures.

After World War II his step-son, Dr. John Straub, returned to take over the operation of the hospital, and there a unique team evolved as a surgical unit, for the two doctors were assisted in surgery by Mrs. Marie Straub, a registered nurse, and Mrs. McBride and Douglas Straub, both trained in surgical technique.

In September, Dr. McBride was one of several physicians in the state who were presented a 50-year gold pin by the Colorado Medical Society at the annual convention in Colorado Springs.

Surviving are his widow, his two children, Robert of Henderson, Nevada, and Mrs. Robert Campbell of Portsmouth, Va.; his two step-children, Dr. John Straub and Douglas Straub of Limon, and Mrs. Loyd Moore, Jr.

—*The Flagler News, 10/12/67*

* * * *

Walter S. Chapman, Walsenburg, one of the oldest members of the Colorado Medical Society, died in late September in Pueblo, aged 95 years. Dr. Chapman was born on October 29, 1872, in Roseburg, Oregon. He graduated from the Medical School of the University of Colorado in 1896. He was the first physician to intern at St. Joseph's Hospital in Denver. Following this training he started his practice in Ward, Colorado, which was very active as a mining camp. Later he moved to Rouse, Colorado, another mining camp, south of Walsenburg where his office was an old shack with an adobe floor.

During the Spanish-American war he served as a surgeon, attaining the rank of captain. Later he was a surgeon for the C. F. & I. Steel Corporation for 24 years. Dr. Chapman was very active in his practice during the typhoid epidemic in 1898 and in the influenza epidemic of 1918.

In 1907, he married Miss Althea Stella Keyes who was a school teacher at Rouse; he was a school board member at the time.

Dr. Chapman was very active in community affairs; beside his military career and being a school board member in Rouse, he helped in organizing the Walsenburg Chamber of Commerce to which city he had moved in 1911. He was Huerfano County coroner for ten years, and he was county treasurer for two years.

Among the honors he received was being one of three finalists for the title of "U. S. Doctor of the Year" in 1950; he had also been the recipient of the 50-year award of the Medical Alumni Association of the University of Colorado and of the 50-year award of the Colorado Medical Society. In 1948 he was named "the most beloved citizen of Huerfano County" and was the only person to have been so honored, and this was after 51 years of practice.

After 61 years of practice Dr. Chapman suffered a fractured hip in 1958 which necessitated his giving up an active practice, but on recovering he continued to go downtown in Walsenburg to spin tales of the past with his many friends.

He was a life member of the Elks Club, Chamber of Commerce, the American Medical Association and the Colorado Medical Society. He was also a Royal Arch Mason and a member of the Kiwanis Club, the Shrine and the Eagles. Survivors include a daughter, Dr. Frances Chapman of Los Angeles, and a son, Walter of Denver, and several grandchildren and great-grandchildren.

The imprint upon a community by a physician and surgeon such as **Robert G. Packard** will long be remembered. He was a true physician with a heritage from both father and mother which helped to make him an outstanding orthopedic surgeon; for his father had preceded him in this specialty. For many years Dr. Packard had served on the staffs of the various hospitals, and his closest ties were with St. Luke's and Children's Hospitals. At the latter institution he gave freely and willingly of his time to the maimed and crippled children who have become useful citizens because of Dr. Packard's skill. One who had ever seen the children with spinal tuberculosis lying in unnatural positions on Bradford frames can never forget what "crippled children" meant, and there were many operations he performed gratis on the victims of "infantile paralysis" which further helped develop useful citizens.

Robert Packard was born February 13, 1886, in Hartford, Connecticut, and came to Denver with his parents, Dr. and Mrs. George B. Packard, in 1890. He graduated in 1908 from the University of Colorado, receiving his medical degree in 1912 from the School of Medicine of Northwestern University. He was honored by becoming a member of Phi Beta Kappa and Alpha Omega Alpha. He served as intern at St. Luke's Hospital in Chicago followed by graduate study at Children's Hospital in Boston. He was an early diplomate of the American Board of Orthopedic Surgery.

Dr. Packard served overseas in World War I as a major in the Army Medical Corps, and after the war returned to Denver to enter private practice. He retired in 1965 because of developing ill health.

In 1922 he married Elfreda Van Meter, daughter of the late Dr. and Mrs. Seymour Van Meter. Dr. Van Meter was an outstanding surgeon of that era and was especially noted for his surgery of the thyroid.

Dr. Packard was a founder of the Rocky Mountain Orthopaedic Society, and a member of the Denver Clinical and Pathological Society, the American College of Orthopaedic Surgeons and the American College of Surgeons; also he was a member of the Denver and Colorado Medical Societies.

He had served as president of the staff of Children's Hospital and was a member of the staffs of St. Joseph's and St. Luke's Hospitals. He was a charter member of the National Foundation for Infantile Paralysis and a former trustee and treasurer of the Crippled Children's Air Fund. He belonged to the Denver Country Club and to various Masonic organizations.

In addition to his widow, survivors include a son, Robert G. Packard, of Grand Junction; two daughters, Mrs. Bruce M. Rockwell of Denver, and Mrs. Robert H. Ramsey of Colorado Springs; a brother, Dr. George B. Packard of Denver, and ten grandchildren.

Dr. Frederick A. Garlock, aged 41, a young anesthesiologist, died October 9, 1967, as a result of a two-car crash on September 23 at West Alameda Avenue and Highway 40, west of Denver. Robert N. Garland, his 18-year-old son, was also seriously injured at the time.

Dr. Garlock was born in Ames, Iowa, on March 5, 1926. He was reared and educated in Bethesda, Maryland. He served in the U. S. Navy during World War II and practiced in Great Bend, Kansas, before coming to Denver in 1963.

After graduate work in anesthesiology he associated himself with an anesthesiology group limiting his practice mainly to St. Anthony's, Beth Israel and Lutheran Hospitals. He was a member of the Colorado Society of Anesthesiologists, the American Society of Anesthesiologists, Clear Creek Valley Medical Society, the Colorado Medical Society and the American Medical Association.

In addition to his son, Robert, Dr. Garlock is survived by his widow, Jeanne; three sons, Richard C., Frederick Lloyd and Jeffrey Scott; two daughters, Cheryl Ann and Stephanie M., all of Golden, and his parents, Mr. and Mrs. Fred L. Garlock of Bethesda, Maryland.

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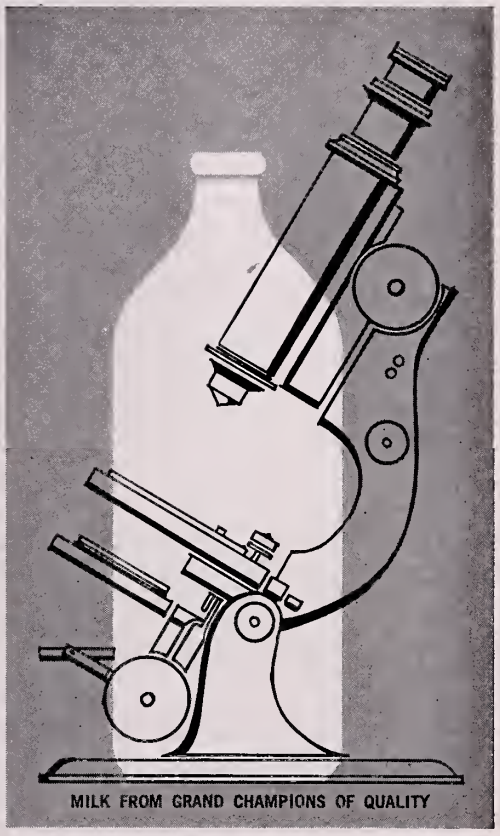

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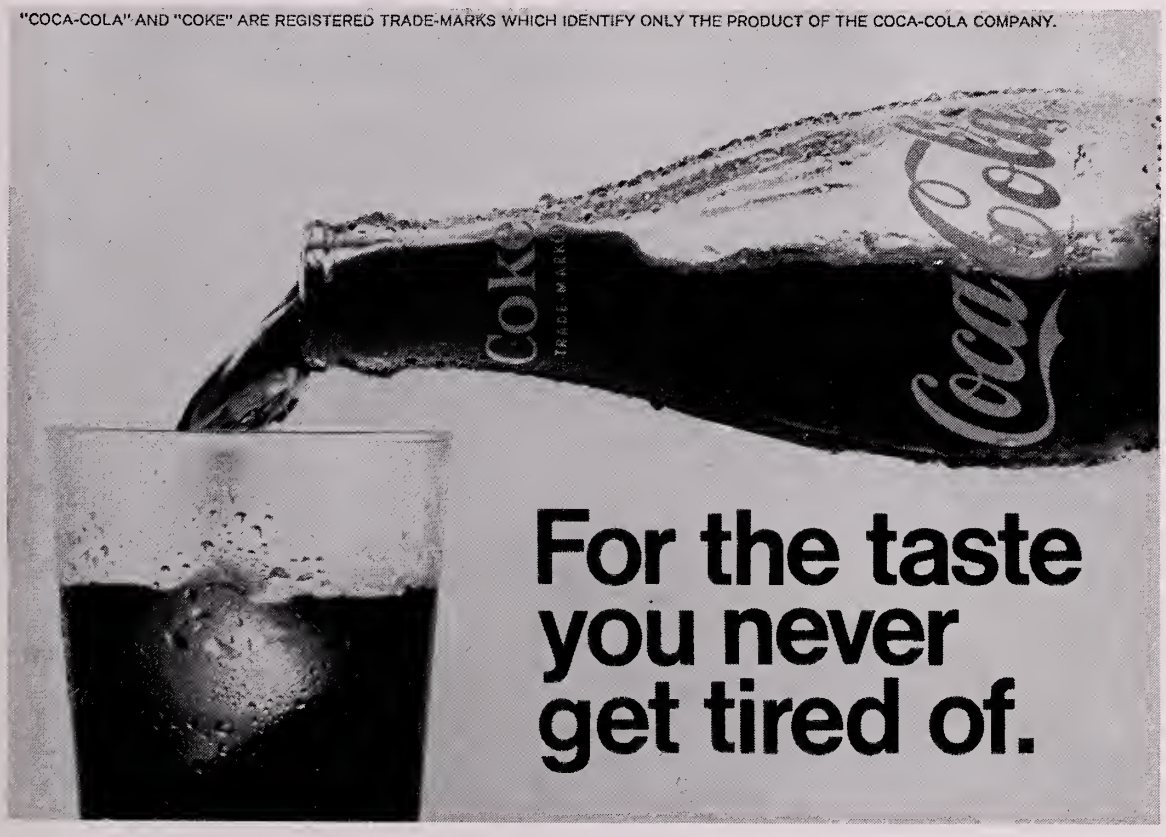

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Volunteer Physicians

The state medical societies have shown a real and productive interest in the Volunteer Physicians for Viet Nam program, an interest vital to its continuing success. This program is financed by the United States Agency for International Development (USAID), and administered, under contract, by the American Medical Association. Physicians sent to South Viet Nam under the program serve a 60-day tour of duty at one of 18 provincial civilian hospitals. The volunteer receives only his transportation and an expense allowance of $10 per day; otherwise his services are entirely voluntary. . . . Over three hundred physicians have participated in the program since its inception. Approximately one out of every 1,000 licensed physicians in the United States have voluntarily provided, under this program alone, over 50 man years of medical care to the civilian population of South Viet Nam. Current programming calls for the continuing recruitment of 32 volunteers every 60 days; 16 for medicine (general practitioners, internists, and pediatricians) and 16 for surgery (general surgeons, orthopedic surgeons, and ophthalmologists). . . . This program is one of the most successful elements of the U. S. civilian assistance programs. As a consequence, funds have now been provided to increase the number of physicians serving in Viet Nam at any one time from 32 to 50 within the next year; thus, we may have a procurement objective for 300 volunteers in 1968, again one per 1,000 licensed physicians. . . . More applications, especially from general surgeons, orthopedic surgeons, general practitioners and internists are needed. Any physician who wishes to participate in this program may obtain further information from Charles H. Moseley, M.D., Project Director, Volunteer Physicians for Viet Nam, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

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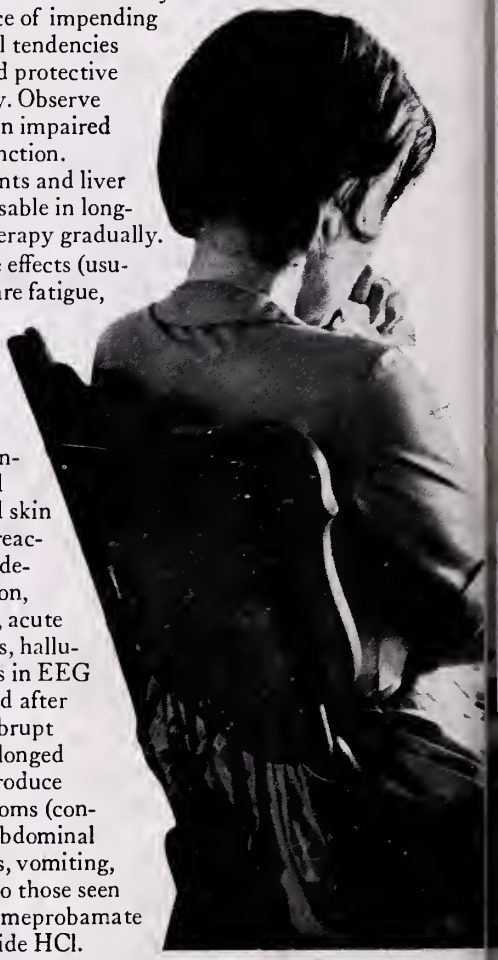

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